

A Survey of  
The British Empire

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# A Survey of The British Empire

HISTORICAL GEOGRAPHICAL  
AND COMMERCIAL

BY

DAVID FREW, B.A.

Author of "Blackie's New Systematic Geographies"  
"Blackie's Elementary Regional and  
Practical Geographies", &c

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## PREFACE

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The object of this book is to give, in broad outline, an account of the British Empire in its present extent and of the way in which it has been built up. The supreme importance of Britain in the empire is emphasized in an early chapter, but it has been considered needless to include a detailed account of its history and geography. The British dominions beyond the seas are dealt with continent by continent, the order of the continents being that of their historical connection with the empire. In the case of each of the great divisions, a survey of the leading facts of its history is followed by an account of its physical and political geography.

The second part of the book treats of the commercial aspect of the empire, and in this connection the home-country necessarily takes the leading place. A brief explanation of the nature and importance of international trade is followed by a survey of the trade of the United Kingdom and of each of the great commercial divisions of the empire. The principal commodities of the trade

of the empire are then dealt with singly in a systematic order, beginning with the cereals and other food-stuffs, and proceeding by way of raw materials to manufactured goods. The contents of the whole book are summarized for reference and revision in three appendices, namely: a table showing the area and population of the parts of the empire; a list of the principal dates in the history of the empire from the end of the fifteenth century to the present day; a list, in alphabetical order, with biographical notices, of the men mentioned in the historical chapters.

Throughout the book statistics have been sparingly introduced, and in every case they have been expressed as round numbers which can be easily retained in the memory. Alike in figures relating to areas, populations, and trade, relative values are of more importance in the formation of just conceptions of the empire than exact amounts.

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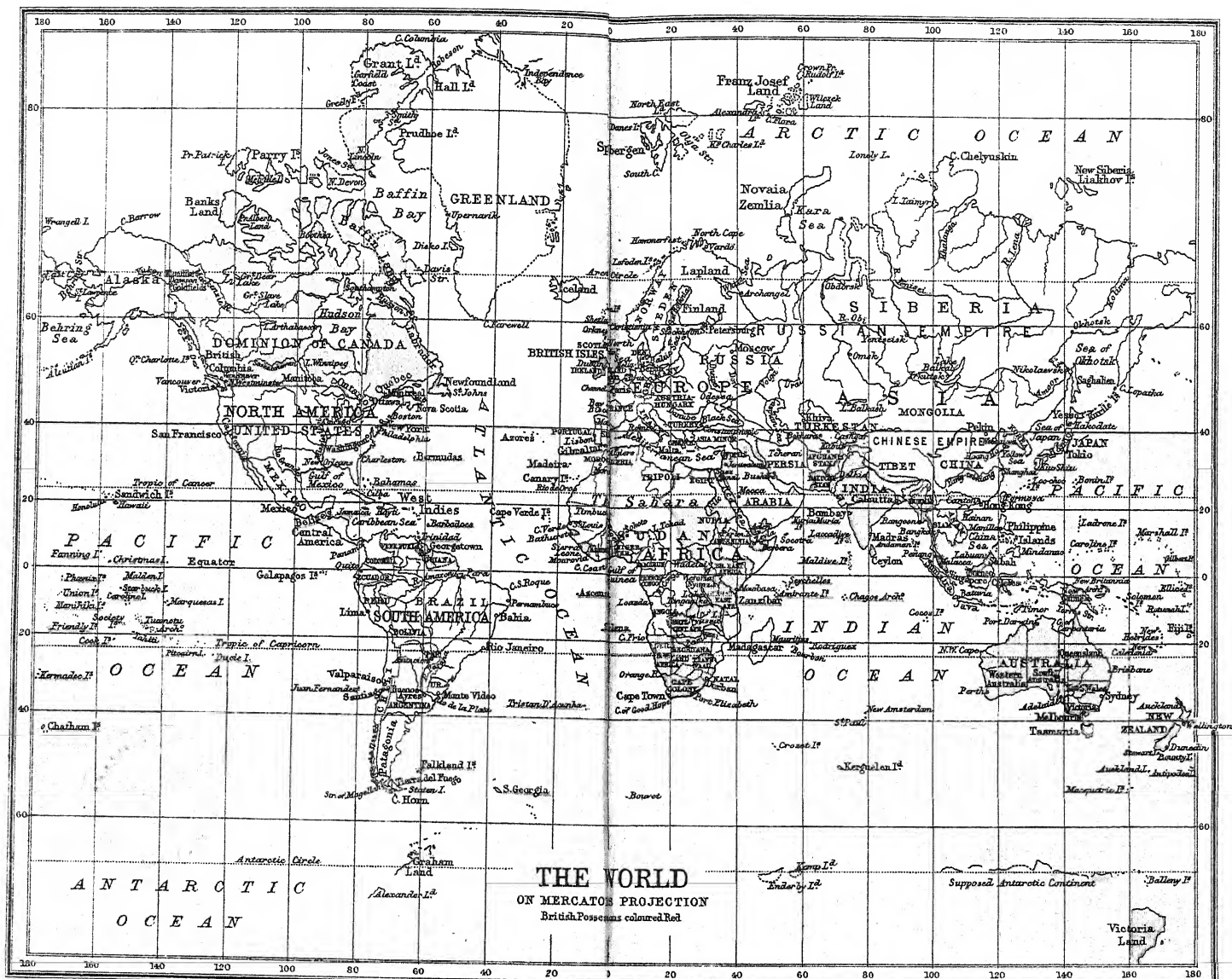
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# HISTORY AND GEOGRAPHY

## OF THE

### BRITISH EMPIRE

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#### I. The British Empire: What It Is

The King's official title—Meaning of emperor and empire—What the British Empire is—Title of Emperor only in India—Other Empires than the British—Members of the British Empire: mother-country, India, dependencies, colonies, protectorates.

#### Emperor and Empire

The sovereign of Britain is officially described as “by the Grace of God, of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, King, Defender of the Faith, Emperor of India”. The name *emperor*, which appears in this title, denotes one who rules over an empire, and an *empire* properly means a group of states or territories under the sway of a single ruler. King George is sovereign over each of the counties of England, but he is not called Emperor of England, because these counties are not distinct states, but only divisions of one state. England, India, and Nigeria, however, to take only a few of the British dominions, are totally different states or territories united only in allegiance to a common sovereign,

and they therefore form parts of an empire. All the countries or states throughout the world which acknowledge the king of Britain as their ruler form together the British Empire.

Though the whole of the British dominions are included under the name British Empire, the sovereign has the actual title of emperor only in India; over all the remaining countries he is simply entitled *king*. This difference is not without importance, for the position of our sovereign in India is very different from his position in, say, Australia. In India he rules over Asiatic peoples, who have very little part in managing their own public affairs, but in Australia his subjects are almost all the descendants of Britons who emigrated from the mother-country, and these now manage the business of their own state with hardly any interference from home. In many of the African parts of the British Empire our sovereign also rules over alien races who are not allowed to govern themselves, though he has not assumed the title of emperor over these African peoples.

Of existing empires other than the British, the most noteworthy are the Russian and the French. While the British Empire covers one-fourth of the land surface of the globe, and includes fully one-fourth of its population, the Russian Socialist Federation of Soviet Republics, the name now given to what was formerly the Russian Empire, covers little more than one-seventh of the earth's surface, and includes less than one-eighth of its population. France, on the other hand, has an empire which covers an area of one-tenth of the earth's surface, but its population is less than one-fourth of the population of the British Empire. After the Great War the German Empire collapsed.

## Members of the British Empire

In addition to the United Kingdom the British Empire includes more than fifty distinct governments of various kinds. The greatest in many respects is India, which contains about three-quarters of the total population of the whole empire. The remaining parts of the empire are known as colonies, protectorates, and dependencies. All the members of the empire other than the mother-country are *dependencies*, since they are dependent on the mother-country—that is, they are bound to it as children to a parent. Some of them are so dependent that they can do nothing for themselves, and continually require help from the British Government; but others, such as Canada and Australia, are so little dependent on Britain as to be very nearly independent nations.

The word *colony* is properly applied to countries, like Australia, which have been colonized or settled by British people, but it is often used to denote countries where almost the whole population consists of native races. A *protectorate* is a stretch of territory which has been taken by the British, or some other, government under its protection. In a protectorate the protecting government often leaves the native rulers almost as they were before, but it prevents native wars, puts the natural wealth of the country to profitable use, and in other ways tries to improve the country and the people. Africa is the continent of protectorates.

*Mandatory territories* is the name given to those parts of the former German and Turkish empires placed by the League of Nations under the care of more advanced nations, which became responsible for them to the League.

## 2. The Home-Country

The United Kingdom the most important part of the Empire—Shakespeare on England—Colonies more go-ahead than Britain—Britain's Commercial Advantages—Her great Seaports—Her great History and great Men.

### The Heart of the Empire

Whatever may be the case in the distant future, the United Kingdom is at present, and must long remain, the most important part of the British Empire. Some of the colonies, such as Australia, New Zealand, Cape Colony, Natal, and Canada, have been peopled wholly or partly by emigrants from the British Islands, and of the great army of officials required to govern the other possessions almost all belong to the home-country. The cost of the imperial navy falls almost entirely upon the United Kingdom, although its benefits are experienced by every part of the empire. Most negotiations with foreign nations regarding colonial matters must be conducted by the British Government in London. Britain, and especially London, is the heart and brain of the empire.

It is natural and right to be proud of what Britons have done throughout the world, but we must not cease to love the little island-group in the northern sea. We need more than ever to remember the noble words put by Shakespeare into the mouth of the dying John of Gaunt, in which he speaks (*Richard II*, ii. 1) of

“This royal throne of kings, this scepter'd isle,  
This earth of majesty, this seat of Mars,  
This other Eden, demi-paradise ;  
This fortress built by Nature for herself

Against infection and the hand of war ;  
This happy breed of men, this little world ;  
This precious stone set in the silver sea,  
Which serves it in the office of a wall,  
Or as a moat defensive to a house,  
Against the envy of less happier lands ;  
This blessed plot, this earth, this realm, this England."

When compared with such colonies as Australia and New Zealand the mother-country may appear slow and old-fashioned, but the true patriot will not readily believe that his native land has almost ended its work and can do little more. The colonies have been able, as it were, to make a fresh start in building up their society, and they have had the long experience of the old country to guide them. Social problems of a complicated and sometimes painful kind are found in Australia and Canada as well as in Britain, but they are probably more difficult and troublesome in the home-country. The great Australasian colonies have made many interesting attempts to solve these problems, and from these we in Britain will doubtless in time learn much.

### Britain's Natural Advantages

Though the British Islands are small compared with the other chief states of Europe, and very small in comparison with Australia, Canada, and the great African protectorates, yet they are very highly favoured by nature. They are centrally situated among the great land masses of the globe, and are thus admirably adapted for trading with all parts of the world. The sea protects them from invasion in time of war, and links them commercially to other nations in time of peace. For their

size the British islands have a very long coast-line, owing to the numerous bays and estuaries which indent the coasts. These form splendid natural harbours for shipping, and the fine navigable rivers, though very much smaller than the great rivers of the world, give access to the heart of the country.

Owing to our temperate climate our shores and ports are never blocked by ice for any part of the year. The honour of introducing the railway belongs to Britain, and the country is now covered by a net-work of railways, which indeed have largely taken the place of the rivers as a means of communication. Her immense deposits of coal have made Britain a great manufacturing nation, and in return for her manufactured products she obtains from the colonies and from foreign nations food-stuffs and other commodities which she does not herself produce, or which she does not produce in sufficient quantity.

Even the very smallness of Britain gives it certain advantages, since all the great centres of production and exchange are comparatively close together, and so imported raw material can be quickly sent to the manufacturing centres, whilst the finished products readily reach the ports for export to the colonies and foreign countries. Some of these ports, such as London, Liverpool, and Glasgow, carry on an immense trade, and are provided with extensive docks and other needful accommodation for shipping. London is the largest city on the globe, with a population a half greater than that of all Scotland and a third greater than that of all Australia.

## Britain's History and Heroes

In thinking of Britain as the centre and head of the empire we must not forget its venerable past history and its long roll of great men. A true Briton must always remember with pride the great men of every kind, statesmen, warriors, explorers, writers, men of science, inventors, artists, preachers, philosophers, merchants, and others, who did so much to raise Britain to its present exalted position. The Britons in Australia, Canada, and elsewhere remember them too, and in this way they feel that they are still sons of the mother-country, although far removed from it.

---

## 3. The British Empire: How it has Grown

Area and Population of the Empire—Enumeration of the parts of the Empire—Mode of Growth—Newfoundland the oldest British colony—Gambia—The Empire in 1700—Treaty of Utrecht—Seven Years' War and The Treaty of Paris—Revolutionary wars and Waterloo—Loss of United States—Empire in Australasia and Africa.

### Extent of the British Empire

At present the total area of the British Empire is about thirteen million square miles, and its total population about four hundred millions. It is thus more than three times as large as the whole continent of Europe, and more than a hundred times as extensive as the whole of the British Islands. Its population is about the same as that of all Europe, and about ten times that of the United Kingdom.



In Europe it includes, besides the mother-country and the Channel Islands, only the fortress of Gibraltar, at the entrance to the Mediterranean Sea, and the Maltese Islands in the centre of that sea; but large parts of all the other continents belong to it. In Asia, Britain rules the great Indian Empire, with over three hundred million inhabitants of many different races and religions, besides the island of Ceylon, settlements in the Straits of Malacca, and other smaller possessions. The great island of Australia, which belongs entirely to the empire, is generally regarded as a separate continent, and the important group of islands to the south, called New Zealand, is also British. In the Pacific Ocean Britain has a host of island possessions, and in the American continent she is mistress of the great Dominion of Canada, of Newfoundland, of some of the chief West Indian islands, and of other less important territories. Besides all these, more than a third of the continent of Africa is under British rule.

### Growth of the Empire

These vast territories have come under British sway in many different ways and at widely separated periods. Some have been gained by peaceful settlement, as, for example, Australia and New Zealand, though in the latter there were at one time serious wars with the sturdy natives. Others, such as India, have been won by conquest of the natives in war, and by the defeat of rival European powers, such as France. Several of our colonial possessions were won and lost, gained and surrendered, several times before they were finally included in the Empire. The African protectorates of

the European powers have been arranged by statesmen without consulting the native inhabitants, and in some cases, such as the Anglo-Egyptian Sudan, native resistance has led to serious warfare. The history of the most important members of the Empire will be told briefly in the following chapters, but it will be well to give here a concise general view of the growth of the whole.

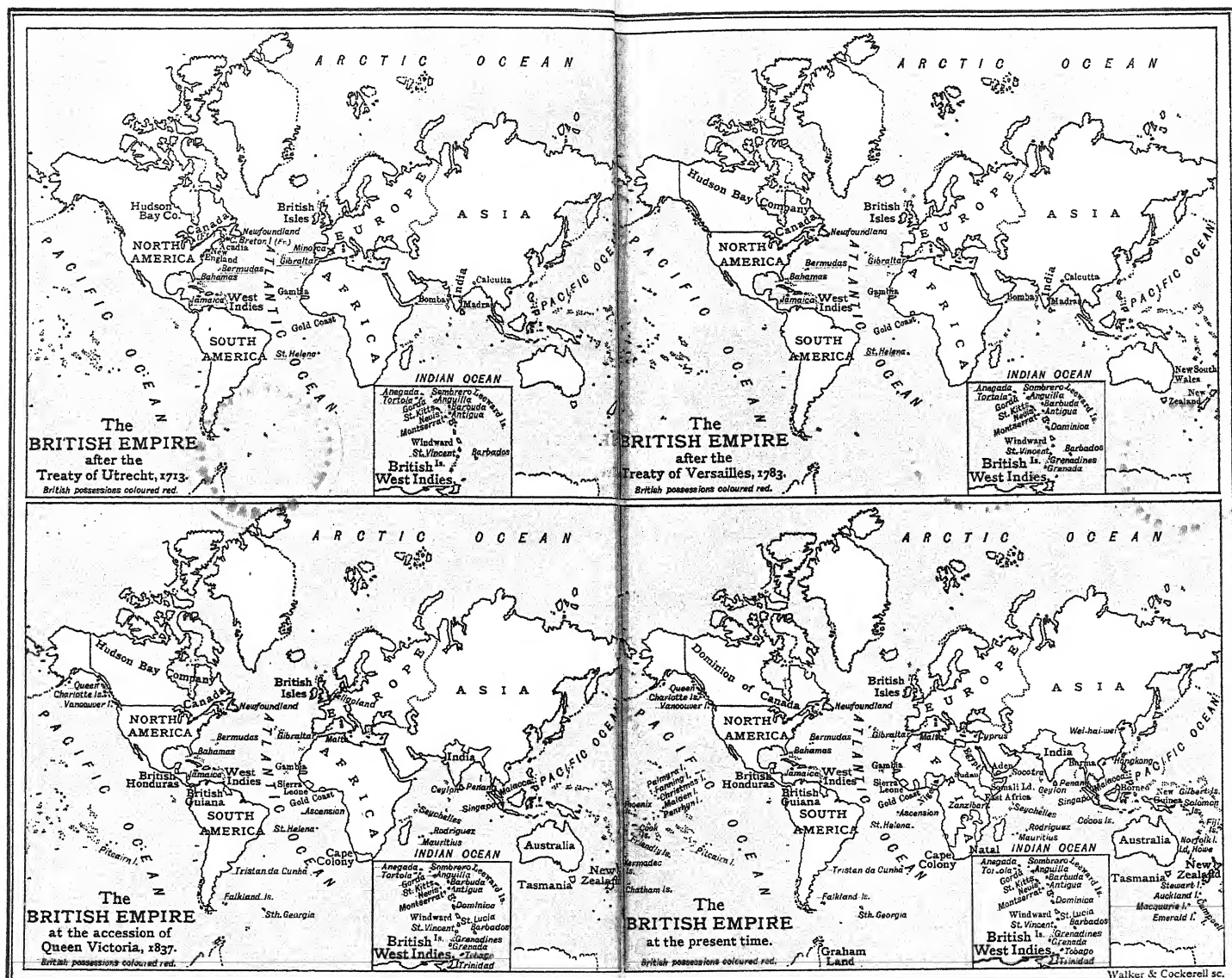
### The Earlier Colonies

Our oldest colony is Newfoundland, which was discovered by John Cabot in 1497, a few years after Columbus's famous first voyage. It was formally taken possession of in the name of Queen Elizabeth by Sir Humphrey Gilbert in 1583. Only five years after this annexation, in the year of the great Armada, a beginning was made with trade on the River Gambia, in West Africa, where there is still a British possession. For a long time the colonial empire grew slowly, and at the end of the seventeenth century it included only Gambia and the Gold Coast in Western Africa, the oceanic island of St. Helena, Jamaica, the Bermudas, Barbados, and some other islands in the West Indies, besides the New England colonies, which afterwards broke away to form the United States of America. At that time both the French and the British were trying to become masters of the eastern provinces of the present Dominion of Canada, and they did not finally pass into British possession till 1713, when the Treaty of Utrecht was signed.

### The Struggle with France

Both France and Britain sought to found a colonial empire in the eighteenth century, and each tried to check the other. The contest between them was finally settled in Britain's favour in the second half of the century. In the Seven Years' War, which lasted from 1756 to 1763, Britain supported Frederick the Great of Prussia against France, Austria, and Russia, but her share in the European part of the war does not concern us here. The European struggle, however, was accompanied by a great conflict for supremacy between Britain and France in North America and India, and in this struggle Britain was entirely successful. Canada was won by Wolfe's great victory at Quebec in 1759, and British supremacy in India was secured by Clive's victory at Plassey in 1757 and by other important victories. The Treaty of Paris, which ended the war, so far as Britain and France were concerned, in 1763, secured North America and India to Britain.

The struggle between these two great powers was renewed in the wars which followed the French Revolution of 1789, especially in the life-and-death conflict with Napoleon; but the battle of Waterloo, in 1815, destroyed the power of Napoleon. In the interval between the Seven Years' War and the Revolutionary Wars Britain was involved in war with her American colonies in New England and farther south, with the result that in 1783 she had to acknowledge their complete independence as the United States of America. The British Empire in Australasia dates from the end of the eighteenth century, but its great development



belongs entirely to the latter half of the nineteenth. The immense empire in Africa has been almost entirely built up since the beginning of the nineteenth century, and the greater part of it is of very recent origin.

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#### 4. The British Empire: How it is Governed

Variety of the Empire—How India is governed—Colonial and Foreign Offices—Representative institutions and responsible government—Commonwealth of Australia—Dominion of Canada—Union of South Africa—The Imperial Conference—Three kinds of Crown Colonies

##### The Variety of the Empire

One of the most noteworthy features of the Empire is its wonderful variety. Some parts are peopled by Britons who have been accustomed to the free institutions of the mother-country, or by the descendants of such Britons, whilst others are inhabited by degraded tribes and races, some of them not long ago given to cannibalism, head-hunting, and other cruel practices. There are also within the Empire races, such as the French in Canada and the Boers in South Africa, which, after contending with Britain for sovereignty, have accepted British rule, without ceasing to maintain their own nationality. Under such circumstances there must be widely different systems of government in different parts of the Empire, too many and various to be fully explained here, though some of the most important facts may be given

## The Imperial Government in London

The affairs of the British colonial possessions are in the charge of four departments of the British Government, the *India, Foreign, Dominions, and Colonial Offices*, whose heads are the Secretaries of State for India, Foreign Affairs, the Dominions, and the Colonies respectively. The Secretary of State for India looks after the British side of Indian administration, but the Indian side is under the direction of the Viceroy and Governor-General, who represents the King-Emperor in India. He is assisted by the governors, lieutenant-governors, and chief commissioners of the various provinces, by the numerous members of the Indian Civil Service, and by many other officials, nearly all British. Many of the native rulers retain their power, subject to the control of the British authorities, most of them having also to pay an annual sum as tribute. The Hindus and other inhabitants of the country have been granted since 1919 a considerable voice in the management of local affairs. Since the Great War a new kind of territory, mandated territory, has been added to the British Empire. Among such are *Iraq* (Mesopotamia), *Palestine*, and *Kerak* (Trans-Jordan).

## Representative and Responsible Government

New Zealand may be taken as an example of a colony ruled, like ourselves, by a parliament. It has what is called *responsible government and representative institutions*. This means that it has a parliament elected by the people of the colony, just as our House of Commons in London is elected by the people of the United Kingdom, and that the government is in the hands of a

body of ministers who must resign when they have not a majority in parliament. The parliament is said to represent the people, and the ministers are said to be responsible to parliament. There are several differences between the New Zealand system and the British, but the former is mainly copied from the latter. Although the governor of New Zealand is appointed by the king, the British Government has so little to do with affairs in that country that it may be regarded as almost an independent state. Newfoundland is another colony that enjoys responsible and representative government under the same conditions as New Zealand.

### The Federations

In Australia and Canada the system of government is the same as in the colonies just mentioned, with the addition of the principle known as *federation*. The Commonwealth of Australia consists of six states, New South Wales, Victoria, Queensland, South Australia, Western Australia, and Tasmania, each with a parliament, government, and governor of its own, as in New Zealand; but there is also a parliament for the whole Commonwealth, called the Federal Parliament, to which each state sends representatives, and there is a federal ministry and a governor-general of the whole Commonwealth. The federal parliament settles matters concerning the whole Commonwealth or more than one of the states, whilst the state parliaments determine questions which relate only to the individual states.

Again, the Dominion of Canada consists of nine provinces, each with its own parliament, ministry, and lieutenant-governor, whilst for the Dominion there is a

parliament, ministry, and governor-general. Cape Colony, Natal, the Orange Free State, and the Transvaal became one state in 1909, called the Union of South Africa.

### The Imperial Conference

Every four years the Prime Ministers and other representatives of the self-governing dominions beyond the seas meet in London with representatives of the Imperial government in order to discuss and arrange matters affecting the Empire in general. The Prime Minister of the United Kingdom is the President of this Imperial Conference, and the Secretary of State for the Colonies is an important member.

### Crown Colonies

The other British colonial possessions are *crown colonies*: that is, colonies whose affairs are managed altogether or in large part by the British Government in London, acting in the name of the sovereign. Some of them have no parliament at all; others have a parliament whose members are all nominated by the British Government; whilst a few, especially in the West Indies, are allowed to elect a part of their parliament.

---

## 5. British North America: History—I

### Early Discovery and the Struggle for Supremacy

Early Norse explorers — Cabot — Cartier — Champlain — New France —  
Virginia — Pilgrim Fathers — Capture of Quebec, 1629, and restoration



to France—Border warfare—Treaty of Utrecht—First Capture of Louisburg and restoration to France—Expulsion of the Acadians—Seven Years' War—Montcalm's policy—William Pitt—Wolf takes Louisburg—Capture of Quebec by Wolfe—Treaty of Paris—Stamp Act—Import duties at American ports—Boston "Tea-party"—Declaration of Independence of the United States—American victory—Treaty of Versailles.

## New France

Some Norse seamen reached the shores of Labrador and Nova Scotia as early as the eleventh century, but their voyages were unknown to the daring sailors who revealed the New World to the Old in the fifteenth century. John Cabot, a Venetian pilot who had settled in Bristol, crossed to Newfoundland in 1497, five years after Columbus reached the Bahamas in his famous first voyage. A bold Frenchman, Jacques Cartier, sailed up the St. Lawrence to the site of the present Montreal in 1535, and a few years later the French king claimed the country and appointed a viceroy. It was not, however, till the beginning of the seventeenth century that the French made any serious attempt to occupy their new lands. Samuel Champlain, one of the noblest men in the early history of North America, was sent in 1604 to found a settlement in Acadia, corresponding to the present Nova Scotia and New Brunswick. He soon pushed his way up the River St. Lawrence, founded the city of Quebec in 1608, and before his death he added much to European knowledge of the country. In 1627 the French king appointed a governor over the whole country, which was called *New France*, and efforts were made to people it with settlers from France, but with small success.

### English Colonization

While the French were trying to build up an empire in the north of North America, the English were founding colonies farther south, in the eastern part of what is now the United States. Virginia was settled in 1607 by men who held a charter from James I, and in 1620 the celebrated Pilgrim Fathers, who had lived for a time in Holland to enjoy freedom of religion, sailed from Plymouth to America in the *Mayflower* and founded the colony of Massachusetts in New England. Other similar colonies followed, and they progressed steadily and much more rapidly than those of the French in Acadia and Canada. Quebec was captured by the British in 1629 during a war with France, but three years later it was given back by treaty, and the sovereignty of France was recognized in Canada, Acadia, and Cape Breton Island.

### Rivalry of France and Britain

From the latter part of the seventeenth century to past the middle of the eighteenth there was constant fighting between the French and the English on the borders of Canada and the New England colonies, and both sides, but especially the French, employed Indians to fight for them. In 1710 the British finally obtained possession of Nova Scotia, and by the *Treaty of Utrecht*, which concluded the War of the Spanish Succession in 1713, Nova Scotia, Newfoundland, and the vast Hudson's Bay Territory to the north were ceded to Britain. The French still retained Canada proper and the island of

Cape Breton, and on the latter they at once began to build the fortress of Louisburg, which was to play a leading part in later struggles.

In 1745, the year of the great Jacobite rebellion, Louisburg, the key of the St. Lawrence, though strongly fortified, was taken by a small body of New England mechanics, farmers, and fishermen, but the British Government restored it to France three years later. One of the most painful incidents of this time of racial struggle was the expulsion from Nova Scotia to the New England colonies of the French Acadian settlers, about 7000 in number. This step, which was taken in 1755, was thought to be necessary by the local British officials, and upon them the blame must rest, for the home government was not consulted in the matter. This incident is the subject of Longfellow's well-known poem of *Evangeline*.

### Wolfe's Victory

The final struggle for Canada took place as part of the Seven Years' War of 1756-1763. The French commander in Canada was the Marquis of Montcalm, a very able general, and at first the French had the best of it. Montcalm endeavoured, by means of a line of forts, to confine the British to the strip of land between the Appalachian Mountains and the Atlantic Ocean, but the great statesman William Pitt, afterwards Earl of Chatham, thwarted his plans by sending out young and skilful generals to carry out a well-conceived plan of campaign. The greatest of these generals was James Wolfe, till then hardly known. Wolfe captured Louisburg in 1758, and next year proceeded up the St.

Lawrence with a British fleet to take Quebec, which was Montcalm's strongest position.

This city stands on a high cliff in a strong natural position, and it had been splendidly fortified. Wolfe's



first efforts were unsuccessful, and his health began to fail, but after reconnoitring he determined on a bold step, which, in the end, succeeded completely. He took his men up the St. Lawrence River to a place above the city on the opposite bank, and in the night they crossed

in boats and climbed the heights by a steep, winding path. At dawn they faced Montcalm on the Heights of Abraham, and the memorable battle of Quebec was fought. Both commanders fell, but the victory remained with the British. This battle took place in 1759, and next year the British were masters of all Canada. The *Treaty of Paris*, which ended the Seven Years' War in 1763, gave the whole country to Britain except two small islands, St. Pierre and Miquelon, which still belong to France.

### The American Revolution

In gaining Canada Britain lost her own North American colonies. The struggle had been fought largely in their interests, and they were required to pay part of the heavy cost. They might have done so of their own free-will, had they been asked in the proper way, but the British Government acted in an unjust manner, which was opposed to the spirit of British freedom. In 1765 a Stamp Act was passed by the British Parliament, requiring the colonists to pay duty by means of stamps affixed to documents used in ordinary business and legal affairs. This was repealed next year, but Parliament still asserted the right to tax America in this way. In 1767 taxes were imposed on tea, glass, and other articles imported into the American colonies, but American protests led to the repeal of all except the duty on tea. Late in 1773 some Americans, disguised as Indians, boarded some ships which had arrived in Boston harbour laden with tea, and cast the tea into the water. The British Government thereupon tried to ruin the port of Boston, and the colonists now saw that they must prepare for war. In

the end war broke out, and in 1776 the thirteen colonies proclaimed themselves independent as the United States of America. The American commander was George Washington, one of the noblest men in history, who had served with distinction against the French. At first the fortune of war favoured the British, but the surrender of the British general Burgoyne at Saratoga in 1777 caused the French to come to the help of the Americans, and the struggle ended in favour of the rebels in 1781, when Lord Cornwallis surrendered at Yorktown to Washington and a French fleet. Britain recognized the independence of the new republic in the *Treaty of Versailles* in 1783.

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## 6. British North America: History—II

### From Conquest to Federation

Military rule—Quebec Act—Canadian attitude in American War—United Empire Loyalists—New Brunswick formed—Constitutional Act: Ontario and Quebec—War with the United States—Sir Isaac Brock—Canadian rebellion—Lord Durham's Report—Union Act—First submarine cable—Ottawa chosen as Capital—Formation of the Dominion of Canada.

#### The Quebec Act

The British triumph in Canada was followed by fourteen years of military rule, during which the victors foolishly attempted to suppress the French language, laws, and institutions, and to keep Frenchmen out of all public posts. In 1774, however, the *Quebec Act* changed all this, and French law became the law of the land. The effect of this wise measure was soon manifest, for

the Canadians remained loyal during the American Revolution, whilst without it we might have lost not only the United States, but the whole of North America.

### United Empire Loyalists

Many people in the rebel colonies, especially among the well-to-do classes, were opposed to secession from the mother-country, and after the conclusion of peace they were settled in British territory. Some of these *United Empire Loyalists*, as they were called, took up their homes in Nova Scotia, and in 1784 part of that colony was separated from the rest under the name of New Brunswick. Other loyalists went to the lake region now known as Ontario, then an almost uncleared and unsettled forest country. Mainly on the petition of these new settlers the British Government determined to separate Upper Canada or Ontario from Lower Canada or Quebec, and so to establish a Protestant British and a Roman Catholic French colony, which would keep each other in check. This was done by the *Constitutional Act* of 1791, which created parliaments for the two provinces. This act frankly recognized that Canada contained two races or nations, and allowed each to retain its own language, religion, customs, and laws. The wisdom of this policy was not so clear then as it is now, when we see the two races living together in friendship.

### War with the United States

In 1812, when Britain was in the throes of the great struggle against Napoleon, the United States, foolishly and without any real cause, declared war against Britain

and invaded Canada. The Canadians, French and British alike, splendidly repulsed the invasion, and even carried the war into the republican territories. Sir Isaac Brock, the "hero of Upper Canada", highly distinguished himself in the field, and met a heroic death in the war. The war was ended by a treaty in 1814.

### Rebellion in Canada

The year of Queen Victoria's accession to the throne marked a crisis in the history of Canada. In 1837 a rebellion broke out in both Upper and Lower Canada, its leaders being William Mackenzie, a Scotchman, and Louis Papineau, a Frenchman. The rebels wanted many changes in the system of government, and they tried to make Canada a separate republic, but the revolt was easily crushed. To suppress the rebellion was, however, much easier than to remove the grievances of the Canadians, and an imperious governor or a foolish home ministry might have brought about the separation of Canada from the empire.

The difficult task was achieved simply by carrying further the great principles which underlay the Quebec Act and the Constitutional Act, and the man who saved the situation was Lord Durham. That nobleman was sent to Canada in 1838 with very extensive powers, and on his return he drew up his famous *Report on the Affairs of British North America*. This report has guided colonial policy ever since, and its principles have built up the great self-governing colonies in union with the mother-country. Its immediate result was the *Union Act* of 1840, under which the two provinces of Upper and Lower Canada were united, with a single parlia-



ment, and were granted that full responsible government which now belongs to all the great colonies.

### The Dominion and its Capital .

In 1858 Ireland and Newfoundland were connected by a submarine cable, the first ever laid, but it almost immediately failed to act, and a permanent one was not laid till eight years later. The city of Ottawa, which had been founded in 1826 under the name of Bytown, was chosen in 1858 as the capital of the united provinces. The next great event in the history of British North America was the formation of the *Dominion of Canada* by an Act of the Imperial Parliament in 1867. Under this Act Ontario or Upper Canada, Quebec or Lower Canada, New Brunswick, and Nova Scotia were united on a federal basis, that is, they were given a common government and parliament for common affairs, whilst retaining their separate governments and parliaments for provincial affairs. There are now many confederations among the states of the world, some of them being within the limits of the British Empire.

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## 7. British North America : History—III

### The West and North

Growth of the Dominion—Two great periods of Canadian history—Search for North-West Passage—Frobisher—Davis—Hudson—Baffin—Hudson's Bay Company and Rupert's Land—Mackenzie—Cook—Vancouver—Franklin—M'Clure—Selkirk's colony—Province of Manitoba—Louis Riel—Hudson's Bay Company bought out—North-  
(B 130) C

West Territories—British Columbia—Canadian Pacific Railway—  
Prince Edward Island joins the Dominion—Gold found in north-  
west

### Introductory

The history of the British colonies in North America from 1867 to the present time is one of steady progress without many exciting or striking events. The Dominion began with four provinces, Ontario, Quebec, New Brunswick, and Nova Scotia, but it now consists of nine. Newfoundland alone has refused to join the confederation. The union of the maritime and the river provinces may be regarded as closing one great period of Canadian history, that of the upbuilding and consolidation of the east, and opening another, that of the development of the west and north. Some account of these new territories must now be given.

### The North-West Passage

Cabot and Cartier made their great discoveries in the attempt to reach the Pacific Ocean by a *North-West Passage*. Many other bold navigators followed them in this attempt, but the passage was not discovered till the middle of the nineteenth century. Sir Martin Frobisher, one of the great sailors of Elizabeth's reign, reached Hudson's Strait, and in 1587 John Davis sailed up the strait which bears his name, into the broad Baffin Bay. Henry Hudson in 1610 reached the great bay which has been named after him, and sailed to its most southerly point. Quarrels broke out among his men, and finally Hudson and some of his companions were sent adrift by the others. Nothing further is known of the unfortunates, but they must have perished miserably.

The next great name in the history of the search for the North-West Passage is William Baffin, who is commemorated in the names of Baffin Bay and Baffin Land. In 1670 Charles II granted a charter to his cousin Prince Rupert and some other persons, forming them into the *Hudson's Bay Company*, and giving them the sole right to trade in a vast territory to the south and west of Hudson Bay. By the Treaty of Utrecht in 1713 the French recognized the British claim to this region, which was called Rupert's Land.

### Explorers of the West

The greatest explorer of these western lands was a Scotchman, Sir Alexander Mackenzie, who was employed by the North-Western Fur Company, a rival of the Hudson's Bay Company. In 1789 he travelled down the Mackenzie River to the Arctic Ocean, and three years later he crossed the Rocky Mountains and reached the Pacific Ocean. The Pacific coast of the Dominion was partly explored by the famous Captain James Cook in 1778, but the chief name in this connection is that of George Vancouver, who had served under Cook. In 1792 Vancouver carefully surveyed the coast and circumnavigated the island which now bears his name.

### Franklin

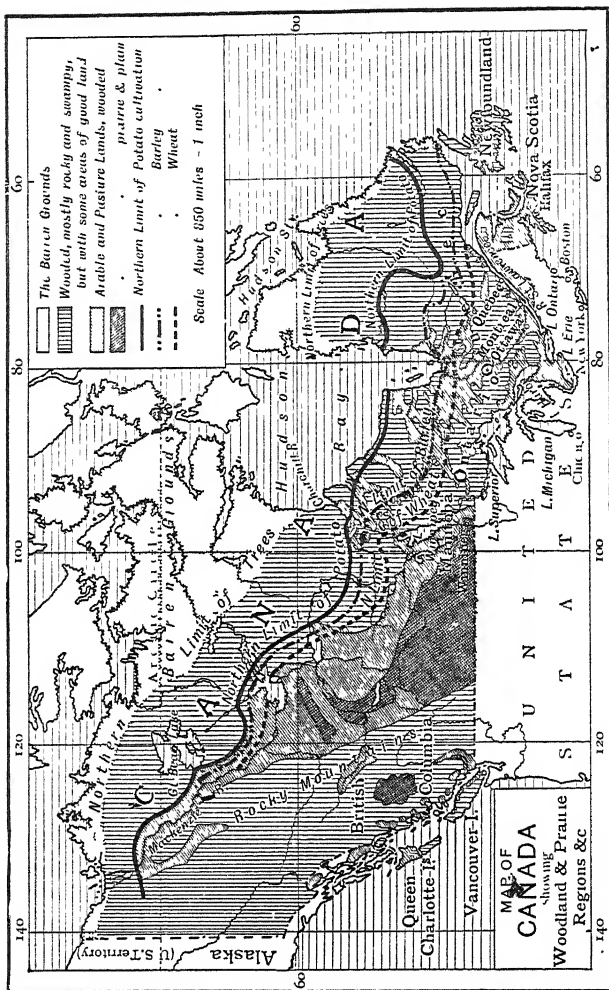
The nineteenth-century explorers of Arctic Canada are too numerous to mention, but one or two of them stand out prominently for various reasons. In 1845 Sir John Franklin set sail with two ships, the *Erebus* and *Terror*, to discover the North-West Passage, but the

whole party perished, and nothing was known of their fate for about nine years

Numerous search expeditions were sent out, and these added greatly to our knowledge of the seas and islands of northern Canada. Papers found in 1857 showed that Franklin had seen the North-West Passage, but the first to make the passage was Sir Robert M'Clure in 1853.

### Manitoba

The first attempt to colonize western Canada was made in 1811 by Thomas Douglas, fifth Earl of Selkirk, a friend of Sir Walter Scott. At that time many of the Scottish Highlanders were being forced to emigrate because the land-owners wished to give up their lands to sheep pasture, and Selkirk's aim was to direct the emigration to British colonies, especially to Canada. He obtained from the Hudson's Bay Company a large extent of land in what is now Manitoba. The settlers he sent out founded Forts Douglas and Daer, both named from Selkirk, one of whose titles was Baron Daer, but the hostility of the North-West Fur Company led to fighting, and the colony was twice broken up. The colony was finally settled in 1817, and after the two rival companies had joined together in 1821 it progressed steadily. Out of this colony grew the province of *Manitoba*, which was added to the Dominion in 1870. The union which then came about was objected to by a party of half-breeds, who rebelled under the leadership of Louis Riel, but the revolt was quickly suppressed by Colonel (afterwards Viscount) Wolseley. Riel led another rebellion in 1885 and was executed after its suppression.



### North-West Territories

The Hudson's Bay Company was bought out by the Dominion in 1870 after having been in existence for two centuries, but it still exists as a purely commercial company. Its territories are now known as the *North-West Territories*, and in 1882 they were divided into the districts of Assiniboia, Saskatchewan, Alberta, and Athabasca. These have now been formed into the two provinces of Alberta and Saskatchewan.

### British Columbia

For many years down to 1858 the Hudson's Bay Company ruled the territory now called *British Columbia* under special licenses from the British Government, but in that year, owing to the discoveries of gold and the rapid influx of miners, the Government determined to rule the country directly. At that time Vancouver Island and the mainland were separate colonies, but in 1866 they were united, and in 1871 the united colony joined the Dominion of Canada. By the act of union the Dominion undertook to construct a railway across the continent from the Atlantic to the Pacific Ocean. This great work was begun without delay, and in 1885 the Canadian Pacific Railway was completed. Prince Edward Island joined the federation in 1873, thus completing the Dominion, except for Newfoundland.

## 8. The Dominion of Canada: Geography—I

### Natural Divisions, Rivers, and Lakes

Political divisions of Canada—Natural divisions—Appalachian region—Woodland region—Prairie region—The Three Steppes—The Sub-Arctic Forest—Barren Grounds—Cordilleran region—St. Lawrence and the Great Lakes—Niagara Falls—Other rivers and lakes

### Political and Natural Divisions of Canada

For administrative purposes the Dominion of Canada consists of the following divisions:—(1) the maritime provinces, Nova Scotia, the old French Acadia, Prince Edward Island, and New Brunswick; (2) the Laurentian or river provinces, Quebec and Ontario, which form Canada proper or Old Canada; (3) the central province of Manitoba, which stretches to 60° N. latitude and along the west shore of Hudson Bay; (4) the Pacific province of British Columbia; (5) the Prairie provinces of Alberta and Saskatchewan; (6) the separate territory of Yukon, in the extreme north-west; and (7) the territories of Mackenzie and Keewatin in the north, and Franklin in the Arctic regions. Ungava and part of Keewatin are now included in Quebec and Ontario.

We have briefly traced the history and development of these political divisions in the preceding lessons, and we must now learn something of the physical geography of the country. For this purpose it will be better to regard it as divided in a different way, namely, into the following natural divisions:—(1) the Appalachian division, to the south and east of the lower St. Lawrence; (2)





the Woodland region of Canada proper; (3) the Prairie region, extending west from the preceding to the Rocky Mountains; (4) the Cordilleran region, the mountainous district in the west, (5) the Sub-Arctic Forest, extending in a great curve from Labrador to the lower Mackenzie; and (6) the Barren Grounds, comprising the mainland north of the foregoing.

### The Appalachian Region

The *Appalachian region*, which includes New Brunswick, Nova Scotia, Cape Breton Island, and Prince Edward Island, besides the part of Quebec to the south of the St. Lawrence, is so named because it is traversed by the northern continuation of the Appalachian Mountains of the eastern and north-eastern United States. These mountains, however, are of no great height in Canada, and the country is rather a rolling upland than a mountainous district proper. Most of it, but especially the interior of New Brunswick, is forest-clad, and it is splendidly watered throughout. The coasts are abundantly supplied with splendid harbours, some of them among the best in the world. Game is abundant in New Brunswick and southern Nova Scotia, and these colonies are favourite resorts of sportsmen. Some parts are fertile and well cultivated, and Prince Edward Island in particular has been called the garden province of the Dominion, but large tracts are barren or suited only for hill pasture.

### Quebec and Ontario

The second natural division includes the greater part of *Quebec and Ontario*. It extends from the St. Law-

rence and the great lakes on the United States frontier northwards to the height of land which divides the Hudson Bay basin from the valley of the St. Lawrence,



and on the west it passes into the prairie region. It is a land of rivers and lakes, the number of the latter being beyond all counting. The peninsula of Ontario between the great lakes, the central plain of Quebec lying along

the north bank of the St. Lawrence, and other parts are splendidly adapted for agriculture, but the north of both provinces is still mainly uncleared forest.

### The Prairie Region

To the west of Ontario is the *prairie region* of Canada, extending to the Rocky Mountains, a district as large as France and Spain together. It is an immense ocean-like plain, treeless in the south, but gradually passing northwards into the sub-arctic forest, first by islets of poplars and then by park-like tracts intermingled with prairie. It rises westward towards the mountains in three stages, separated by low elevations. The first of these steppes, in the east, belongs wholly to Manitoba, and contains some of the finest wheat-lands in the world. The second prairie steppe, at a slightly higher elevation, includes western Manitoba and extends into the province of Saskatchewan. Though inferior to the first steppe, it consists of very fertile agricultural land. Still farther west, and stretching over the province of Alberta, is the third and highest steppe, which consists of excellent ranching country.

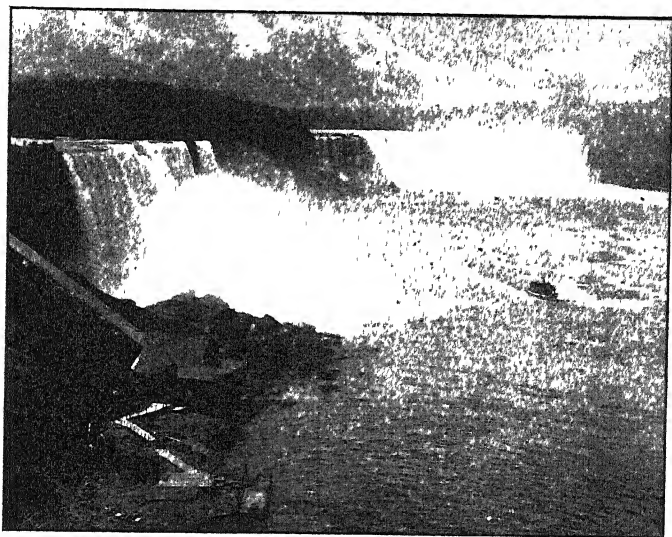
### The Sub-Arctic Forest

North of the eastern woodland region and the central prairie district there extends a broad belt of forest, known as the *sub-arctic forest*. It consists mainly of pines, spruces, and larches, whilst the woodlands farther south are mainly composed of maples, oaks, elms, chestnuts, beeches, birches, and similar trees. Still farther north there is the almost treeless wilderness of the

*Barren Grounds*, the home of the musk-ox and the caribou, the latter a kind of reindeer.

### The Mountainous West

The last great natural division of the Dominion is the *Cordilleran*, in the west. This occupies the whole of



Niagara Falls—Summer

British Columbia and consists of an intricate mass of mountains. The eastern edge of the mass is known as the Rocky Mountains, and the western edge as the Coast Range, and between these two there are several other ranges, notably the Purcell, Selkirk, and Gold Ranges. These mountains rise to an enormous height, far greater than the hills of the east or centre, and they present mag-

nificent rock and glacier scenery. British Columbia has a much-indented coast-line with some admirable natural harbours.

### Lakes and Rivers

In the extent of noble rivers and lakes Canada is second to no country in the world, and of all the



Canadian natural waterways the St. Lawrence and the lakes through which it flows are by far the most important. Excluding Lake Michigan, which belongs entirely to the United States, these lakes of the St. Lawrence are in order down the river: Superior, Huron, St. Clair, Erie, and Ontario. Superior is the largest of all lakes, being nearly as large as Ireland. By means of canals constructed at points where rapids are to be

avoided ships can sail the whole way from the head of Lake Superior, in the heart of the continent, to the Atlantic Ocean. Between Lakes Erie and Ontario, on the frontier of the United States, the river plunges over the celebrated Niagara Falls, one of the great sights of the continent.

The other great rivers and lakes of the Dominion can only be named. The Mackenzie drains Lake Athabasca, Great Slave Lake, and Great Bear Lake to the Arctic Ocean; the Fraser and Columbia flow among the mountains of British Columbia; the Yukon, in the north-west, flows through a rich gold-bearing country into Alaska on its way to the Behring Sea; Hudson Bay receives the Churchill from Athabasca, the Nelson from Lake Winnipeg, and many other rivers; Lake Winnipeg receives the Saskatchewan from the Rocky Mountains, and the Red River from the United States; and New Brunswick is watered by the St. John.

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## 9. The Dominion of Canada: Geography—II

### Climate, Productions, Trade

Great variety of climate—Rainfall—The winters—Chinook winds—Maize and vines—Winter ports—Large forests of valuable timber—Kinds of timber—Wood-pulp for paper-making—Splendid agricultural land—Chief crops—Fruit—Wine—Cattle-raising districts—Atlantic fisheries—Canadian salmon—Whales and seals—Inland fisheries—Fur-trade—Great mineral wealth—Chief minerals—Manufactures—Rivers and canals as means of communication—Railways—Chief ports—Capitals of the Dominion and the Provinces.

### Climate of Canada

Since Canada extends from about the latitude of Oporto in Portugal far into the Arctic zone, its climate must necessarily show great variety. At the one extreme there is the severe climate of the Arctic lands, and at the other there is the comparatively temperate, dry, and extremely healthful climate of southern Ontario, which lies no farther north than Bordeaux or Lombardy. On the Pacific coast the rainfall is in parts excessive in eastern Canada it is moderate, in the central prairie region it is much less, but still sufficient for agriculture, except in the southern part of the Alberta province. In the interior the climate may be said to be characterized by warm summers and cold winters, but the winters are much more pleasant than those of the home-country, since they are not broken by thaws before the advent of spring. Besides, cold is much more easily borne in a dry climate than in a moist one.

The climate of the north-west is excellent in many ways, and wheat can be grown to perfection much farther north than in Britain. A notable feature of it is the warm, dry Chinook winds, which blow from the Rocky Mountains and lick up the dry, powdery snow in winter. As an indication of climate it is of importance to note that maize, which will not ripen in Britain, has been cultivated for centuries in eastern Canada, and that vines grow in the open air in southern Ontario. The cold current which flows along the eastern coast causes the St. Lawrence to be closed by ice in winter, but the harbours of Halifax and St. John are open all the year round.

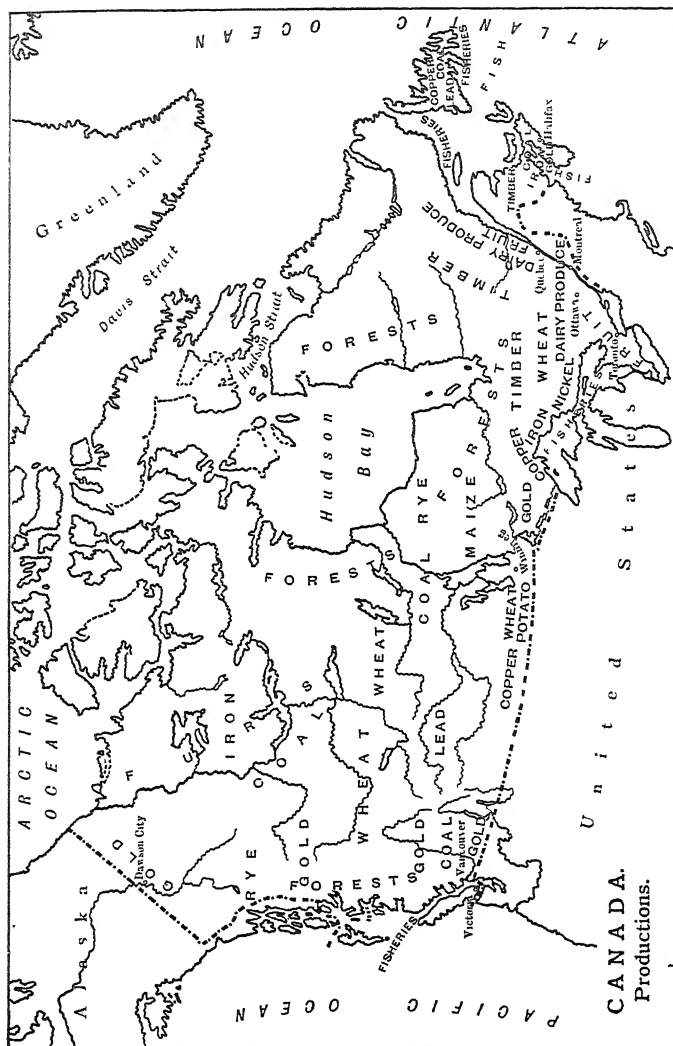
### Canadian Forests

An immense area of the Dominion is still under forest and the maritime provinces and settled parts of Old Canada were densely forested when discovered by Europeans. The forests yield large supplies of valuable timber, and if care be taken to prevent reckless destruction they will do so for long. The sub-arctic forest consists chiefly of pines, spruces, and larches, with some poplars and birches, and in the valuable forests of British Columbia Douglas firs, western cedars, pines, spruce, and balsam firs are found. Hardwood trees, such as maple, oak, birch, and chestnut, form the eastern forests but pines and similar trees appear again on the Atlantic coast. Among the excellent Canadian kinds of timber are white and red pine; and from some of the trees, such as the spruces, large quantities of pulp are now obtained for the manufacture of paper.

### Canadian Agriculture

Canada has boundless stretches of splendid agricultural land, including some of the finest wheat-lands in the world, and grows all the ordinary cereal crops besides maize, tobacco, tomatoes, and numerous other similar crops. The cultivation of wheat on the prairies of Manitoba and the north-west has advanced very rapidly in recent years, but millions of acres are still waiting to be used. Apples, peaches, and other fruits are being grown and exported in ever-increasing quantities, and the vineyards of Ontario yield both grapes and wine. Alberta is a splendid ranching country, and cattle





can be raised in many other districts, especially in parts of British Columbia.

### Canadian Fisheries

The fisheries of the Dominion are of the utmost importance. In the Atlantic waters cod, herring, mackerel, sardines, and other fish are obtained in large numbers, besides lobsters and oysters. The rivers of the east contain salmon exactly like those of Britain, but the salmon which ascend the rivers of British Columbia in such enormous hosts are of several kinds, all different from the British variety. The salmon-canning industry of British Columbia is a very flourishing one. Whales and other large sea-animals are found in the northern seas, and off the Pacific coast fur-bearing seals are obtained. The rivers and lakes of all parts of the country abound in food-fishes, which are now caught in great numbers. The main pursuit of the Hudson's Bay Company, the capture of fur-bearing animals in the north-west, is still actively carried on.

### Canadian Minerals

Not less important than her wealth in forests, agriculture, and fisheries is the mineral wealth of Canada, which is as yet not fully known. Gold is worked in British Columbia, Nova Scotia, and in the Klondike district of the Yukon Valley in the extreme north-west. Nova Scotia and British Columbia yield much coal, and iron is worked in Ontario and Nova Scotia. Copper is another noteworthy Canadian mineral, British Columbia being the chief producer. Ontario also produces petroleum and natural gas, salt, phosphate of lime and other

minerals, including such important metals as silver and nickel. The nickel mines of the Sudbury district are of very great value. Gypsum is abundant in several of the eastern provinces, asbestos is a notable mineral product of Quebec, and New Brunswick has excellent granite.

### Canadian Manufactures

Manufactures are taking an increasingly important place among Canadian industries, among the chief being sugar-refining, tanning, tobacco and cigar making, the making of boots and shoes, cabinet-making, oil-refining, the making of farm implements and machinery, iron and steel manufacture, paper-making, saw-milling, and the making of cottons and woollens.

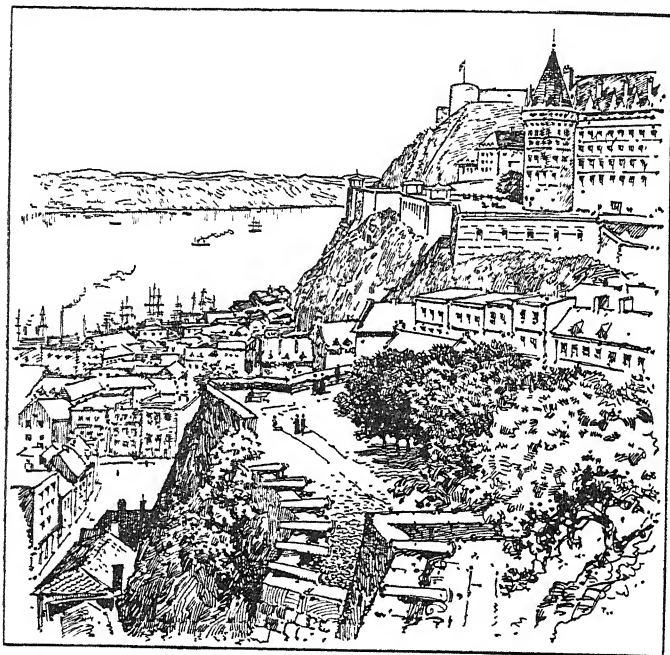
### Internal Communications

The splendid waterways of the country are of great importance for internal communication, and they have been improved by deepening, by the construction of canals at difficult places, and in other ways. Railway construction has proceeded very rapidly in the Dominion. The greatest of the lines is the Canadian National Railways, with an approximate mileage of 18,000 miles. To the Government also belongs the control of the Grand Trunk Railway of Canada, with a mileage of over 5000 miles, making a total of about 23,000 miles. The Canadian Pacific Railway, with a total mileage of nearly 14,000, is next in importance.

### Ports and Capitals

The chief ports of the country are Montreal (Quebec), Toronto (Ontario), St. John (New Brunswick), Halifax

(Nova Scotia), Quebec (Quebec), Vancouver (British Columbia), and Ottawa (Ontario). The capital of the Dominion is Ottawa, and the capitals of the provinces



The Citadel, Quebec

are Halifax (Nova Scotia), Charlottetown (Prince Edward Island), Fredericton (New Brunswick), Quebec (Quebec), Toronto (Ontario), Winnipeg (Manitoba), Regina (Saskatchewan), Edmonton (Alberta), and Victoria (British Columbia).

## 10. Other British Colonies in America

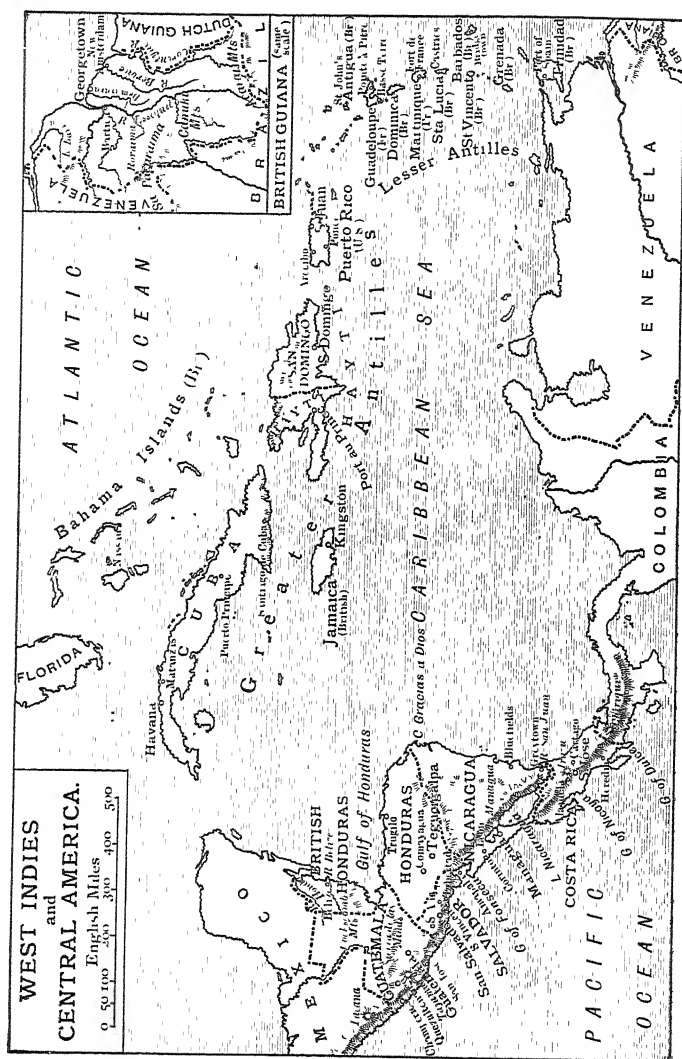
Physical character of Newfoundland—Climate and soil—Cod and other fisheries—Mineral wealth—Labrador—Historical facts—The Bermudas—Climate of the British West Indies—Fertility—Natural calamities—Mostly mountainous—Forests—Sugar and other products—Administrative groups—Columbus—Capture of Jamaica—Rodney—Jamaica—Trinidad—British Honduras—British Guiana

### Newfoundland and Labrador

The island of *Newfoundland* is about a third larger than Ireland. It has a much-indented coast-line, and the interior is greatly cut up with rivers and lakes. Some parts of it are barren, but it is not the uninhabitable country that it was at one time supposed to be. There is a prospect of much of its area being brought under cultivation.

Though the winter is long, severe, and damp, and the summer short, hot, and dry, yet the climate is proved by experience to be a healthy one. Such crops as are produced are very remunerative, especially potatoes. Grain crops thrive well in places, and wheat has been known to yield well. But both climate and soil are more favourable to pasturage and green crops than to grain. So, as dairy-farming is being introduced, agriculture is sure to make good headway, especially if railways are extended through the island.

But Newfoundland is chiefly distinguished for its fisheries, which are carried on over the celebrated fishing-banks around the island. These banks or shallows in the sea abound in a great variety of fish, particularly cod, which have for long been a large article of export



from the island in the form of dried fish; and we must not forget the well-known "cod-liver oil", a product of the fishing.

Minerals are abundant; there are gold, silver, iron, coal, copper, lead, nickel, and gypsum. Comparatively recent discoveries of important iron and copper deposits give promise of a great industrial development in the island.

A strip of the coast of *Labrador* on the mainland belongs to the Government of Newfoundland. The capital of the colony is St. John's, on the east coast of the Avalon peninsula. Newfoundland was discovered by John Cabot in 1497 and passed finally into British hands by the treaty of Utrecht in 1713, but the French then retained certain fishing rights on a part of the coast which were for long a source of trouble.

### The Bermudas

About 1000 miles south of Newfoundland, of which bishopric they form a part, are the *Bermudas*, or *Somers' Islands*. This group of coral islets is about 600 miles from the nearest point of the American continent. Owing to their position the islands enjoy an exceedingly mild climate. They are becoming therefore a favourite holiday and winter resort, especially for the people of the United States. The soil is not fertile, but the islands produce onions, potatoes, and other vegetables for the American markets; also arrowroot and lily bulbs.

### The British West Indies

The British West India Islands, lying in and bordering the sunny waters of the Gulf of Mexico, are amongst the

most favoured of British possessions. Though they are situated mostly within the tropics, the heat is tempered by the surrounding waters, so that, in general, the climate is delightful. The fertile land, stimulated by the warm sunshine and plentiful moisture, produces fruits, vegetables, and flowers in great abundance. Terrible hurricanes, however, are not uncommon, and St. Vincent, as well as the French island of Martinique, have suffered from volcanic eruptions. Kingston, the capital of Jamaica, was destroyed by an earthquake in 1907.

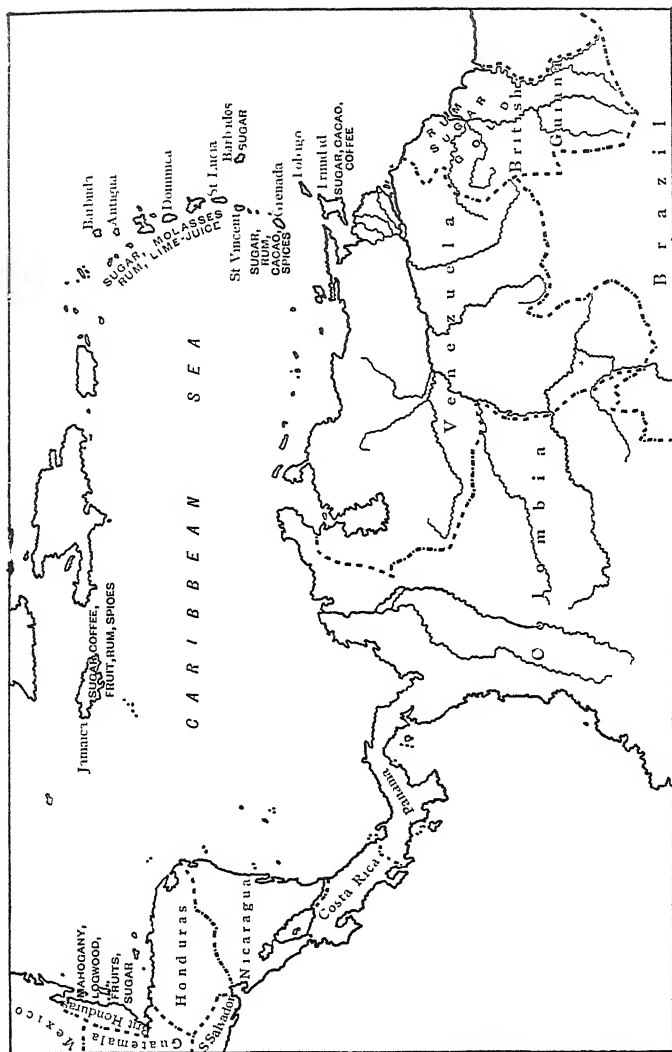
The Bahamas are flat coral islands whose waters produce sponges and turtles, but nearly all the others are mountainous. The higher grounds are covered with thick forests, which yield valuable dye-stuffs and some of the more highly prized kinds of cabinet wood.

Cane-sugar and rum have for long been the chief products of the islands. The competition of beet-root sugar from Germany and France has in the past seriously affected the West Indian sugar industry, and led to an increase in the cultivation of fruits. Pine-apples, bananas, oranges, cocoa, coffee, maize, and tobacco are largely grown for export.

### Chief Islands

The British West India Islands are divided into six groups for administrative purposes, namely, the *Bahamas*, with Nassau as the capital; the federation of the *Leeward Islands*, including the Virgin Islands, St. Kitts, Antigua, Montserrat, and Dominica; the *Windward Islands*, including St. Lucia, St. Vincent, and Grenada; *Barbados*, with Bridgetown as capital; *Trinidad* (capital, Port of Spain) and *Tobago*, near the coast of South





**West Indies and British Guiana---Productions**

America; and *Jamaica*, the largest and most important of all, with Kingston as capital. Other West Indian islands belong to the United States of America, France, and Holland, whilst Cuba and Hayti are independent states.

### Discovery and Conquest

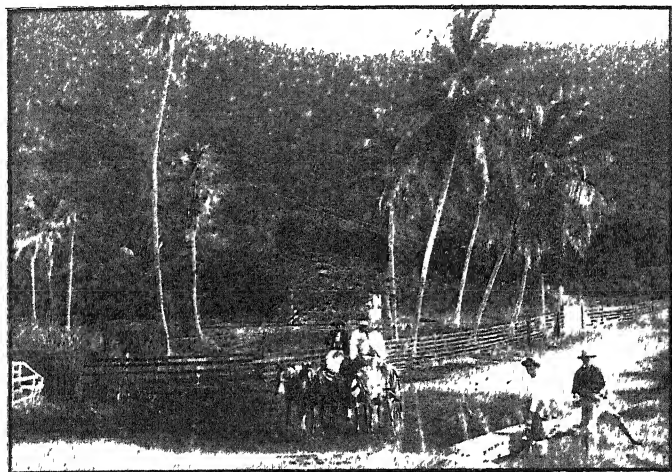
Most of the West Indian islands were discovered by Columbus near the end of the fifteenth century. *Jamaica* was captured from the Spaniards by the British in 1655, and during the next century and a half Britain and France often came into conflict for the possession of these islands. A notable event in the struggle was the great naval victory of Rodney over the French admiral De Grasse in 1782. This triumph practically secured British ascendancy in the West Indies, but there was further fighting during the wars produced by the French Revolution.

### Jamaica and Trinidad

*Jamaica* is more than half as large as Wales, or about one-seventh the size of Scotland. It is a mountainous island, with lovely valleys and abounding in streams. Sugar and rum are now less important exports than fruit, dye-woods, and coffee. Tobacco is cultivated and cigars are made. The island possesses good roads and a considerable mileage of railway. *Trinidad* is another fine island, not so large as *Jamaica*, but exceedingly fertile. It produces cocoa and sugar. Asphalt is obtained from the famous pitch lake of Trinidad, in which fresh supplies are constantly bubbling up.

### British Honduras and Guiana

*British Honduras*, in Central America, on the shores of the Gulf of Mexico, is one of the chief sources of supply of mahogany and logwood. It also grows cocoa-



Crossing a Stream, Jamaica

Photo Valentine

nuts and bananas for the United States market. The capital is Belize.

*British Guiana*, in the north of South America, is a great sugar land. It possesses valuable gold-bearing territory, and yields considerable quantities of the precious metal. It is still largely an undeveloped country. The chief town is Georgetown.

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# II. The Indian Empire: History—I

## From the Earliest Times to the Decline of the Mogul Empire

Earliest history obscure—The historical meaning of the castes—Religion of the Rig-Veda—Brahmanism—Gautama and Buddhism—Asoka—Decline of Buddhism in India—Alexander the Great in the Punjab—Greek ambassadors and a Greek treaty with Asoka—Tartar invasions—Rise of Hinduism—Suttee—Christianity in India—Rise of Mohammedanism—Early Mohammedan dynasties in India—Babar's conquest—Akbar—Aurangzeb—Sivaji and the Mahrattas—The Sikhs—Five divisions of the Mahrattas: the Peshwa—Deccan and Oude.

### Early History

The history of India goes back for thousands of years, but its earlier events are very obscure, and do not specially concern us here. Of the four great castes or social divisions recognized throughout much of northern India, namely, priests or Brahmans, warriors, cultivators or merchants, and low-castes or Sudras, the last represents the original population of the country, which was conquered at a very early date by invaders from Central Asia, whose descendants form the bulk of the first three castes. These invaders first occupied the valley of the Indus, but later advanced to the valleys of the Jumna and the Ganges.

### Ancient Religions

Their early religion consisted in a worship of the sky, water, fire, and other natural elements, and is expressed in the Rig-Veda, one of the oldest books in the world; but when they settled in the Middle Land, about the Ganges and Jumna, their faith passed into a more de-

veloped stage known as *Brahmanism*. The supreme power was worshipped under the three forms of Brahma the Creator, Vishnu the Preserver, and Siva the Destroyer and Reproducer. The Brahmans were profound philosophers and skilled in many branches of knowledge, and much of their work is of the greatest interest to us to-day.

### Rise and Fall of Buddhism

About 550 B.C. there arose in modern Bengal a religious teacher named Gautama, who founded a new religion known as *Buddhism*. Gautama was a royal prince, who renounced the world in order to devote himself to meditation on God and the unseen realities of life, and thus he became Buddha, the Enlightened One. He preached throughout much of northern India, and gained many adherents, and in the third century before our era his religion was adopted by Asoka, a powerful king in Bengal.

Buddhism, which rejected caste and proclaimed the spiritual equality of man, spread widely for some centuries; but about eight centuries after the birth of Christ it began to give way before a reviving Brahmanism. At the present day Buddhism is the faith of nearly a third of the human race, chiefly in Burma, Tibet, China, and Japan; but in India proper, the land of its origin, there are fewer Buddhists than Christians.

### The Greeks and India

Alexander the Great, the famous king of Macedonia, conquered part of the Punjab in the fourth century B.C., and for some centuries afterwards there was constant

intercourse between Greece and India. The Greeks even sent ambassadors to the court of a Bengal monarch, and in 256 B.C. a treaty was concluded between King Asoka, whom we have mentioned above, and a Greek ruler in Asia Minor. The Greek power in north-western India was overthrown about the beginning of the Christian era by Tartar hordes from Central Asia, and for long afterwards Indian history is a record of struggles between these invaders and the settled inhabitants.

### Hinduism and Christianity

The Brahmanism that triumphed over Buddhism differed widely from the earlier Brahmanism. It absorbed much from its defeated rival, and also from the lower forms of worship practised among the older races of the country. The result was modern *Hinduism*, with its many varieties, some of them very degrading and others comparatively pure and noble. The practice of making widows burn themselves alive on the funeral pyres of their dead husbands was unknown to the Vedas and the older faith, but grew up under the new. Some notable attempts have been made in recent times to revive the ancient religion of India in its purity, and much good must come from them in the end. *Christianity* was introduced into India as early as the second century of our era, and has maintained itself there ever since.

### Beginning of the Mogul Empire

In the seventh century after Christ a new religion was founded by Mohammed, a native of western Arabia, and its adherents soon began to spread it by conquest.

India was invaded, but *Mohammedanism* did not gain a secure foothold in that country till about 1000 A.D. Many Mohammedan dynasties ruled over parts of India during the following five centuries, but they are all eclipsed by the great Mogul dynasty which began with the emperor Babar. Babar conquered northern India in 1526, and established the Mogul empire, with Delhi as its capital, but the real founder of its power and splendour was his grandson Akbar, whose reign covers almost the same period as that of Queen Elizabeth. Akbar reduced the whole of northern India, but made little impression on the south. He removed the capital to Agra, where one of his successors built the magnificent Taj Mahal.

### Rise of the Mahrattas and Sikhs

The last great Mogul emperor was Aurungzeb (1658–1707), who made strenuous efforts to conquer the south. He reduced the small Mohammedan kingdoms there, but had to meet a far more serious foe in the rising Mahratta kingdom. The *Mahrattas* were a Hindu military power which became formidable under an able leader named Sivaji, who died in 1680. The Mahrattas in the south and another Hindu military power in the north, known as the *Sikhs*, rose into prominence as the Mogul empire declined under Aurungzeb's feeble successors, and it was from these two Hindu powers rather than from the Mohammedan empire that Britain had to win India.

The Mahrattas ultimately split into five great divisions, each of which figures in the wars with Britain. The main division had its head-quarters at Poona, and was under a ruler called the Peshwa. Of the states

which separated themselves from the decaying Mogul empire the most notable were the *Deccan*, ruled by a Nizam, and *Oude*.

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## 12. The Indian Empire: History—II

### The Growth of British Power to Warren Hastings

Vasco da Gama reaches India—Albuquerque and Portuguese power in India—Dutch supremacy—British East India Company—Surat factory—Massacre of Amboyna and its effect—Foundation of Madras Calcutta, and Pondicherry: Bombay acquired—Company enters on the work of conquest—French policy—Capture and restoration of Madras—The Arcot vacancy—Clive's success—Seven Years' War—"Black Hole of Calcutta"—Clive takes Calcutta—Battle of Plassey—Masulipatam taken—Wandewash—Pondicherry captured—Buxar—Warren Hastings—Internal reforms—Relations with Indian rulers—Impeachment—First Mahratta War—War with Hyder Ali.

### Rivalry of Europeans in India

Europeans had little or no communication with India for many centuries after the withdrawal of the Greeks. Five years after Columbus made his first voyage to America in search of India, and in the same year as John Cabot discovered Newfoundland, a Portuguese sailor, Vasco da Gama, doubled the Cape of Good Hope and reached the port of Calicut in south-western India. Early in the next century, especially under the able viceroy Albuquerque, the Portuguese began to build up an empire in the East Indies, but about a century later their power in the East was destroyed by the Dutch. The famous *British East India Company* received a charter



from Queen Elizabeth in 1600 giving it the sole right of trading in the East Indies. It established its first factory or fortified trading-post at Surat, a seaport to the north of Bombay, and it had to maintain a keen struggle with the Dutch and the Portuguese.

The British company tried to obtain a share in the trade of the eastern archipelago, but in 1623 the Dutch massacred the British settlers at Amboyna in the Moluccas, and in consequence of this the Company abandoned most of the islands and began to form more settlements in the Indian peninsula. Fort St. George, now called Madras, was founded in 1639, and Hugli, in Bengal, in the following year. Bombay was given in 1661 to Charles II as part of the dowry of his Portuguese wife, and a few years later he sold it to the Company. Fort William, now Calcutta, was founded in 1696. The French also obtained a foothold in India, and in 1674 they established their chief settlement, Pondicherry, to the south of Madras.

### Britain and France in India

For nearly a century the East India Company confined itself to trade and did not seek to conquer any of the country. The struggles between the decaying Mogul empire and the rising Mahratta power, however, forced it to alter its policy and secure a firmer standing in the country, and this determination was strengthened by the efforts of the French, then Britain's great rivals, to found an empire in southern India. Under two able governors, Dumas and Dupleix, the French began to interfere in the affairs of the native states so as to become their masters, and this policy was afterwards

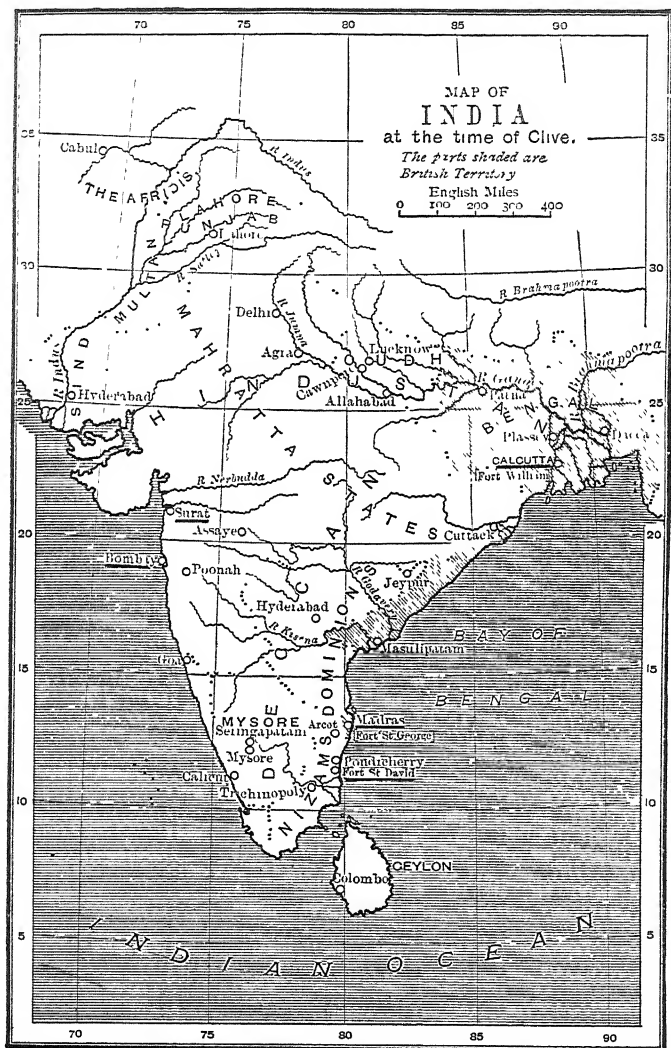
adopted by the British rulers who built up the British empire in India.

During a war between Britain and France Madras was taken from the British in 1746, but it was restored by treaty two years later. Several British fugitives from the town took refuge in Fort St. David, another British post, near Pondicherry. Among these was the celebrated Robert Clive, a servant of the Company, who was destined to thwart the bold designs of Dupleix.

The strip of coast which includes Madras and Pondicherry was called the Carnatic and was ruled by a prince called the Nawab of Arcot. The throne became vacant in 1750, and Dupleix and the British put forward different candidates. War ensued, during which Clive distinguished himself by his brilliant capture and defence of the town of Arcot. His health was seriously impaired by his services, and he returned to England for a time. When he again set foot in India, the Seven Years' War had broken out, and the struggle between Britain and France in India became more severe.

### British Conquests

The young Nawab, Surajah Dowlah, who governed Bengal under the Mogul emperor, attacked Calcutta in 1756 and threw 146 British prisoners into a small cell which had been used as a military prison. The great majority died from the effects of the heat and foul air, only 23 being found alive after a night's imprisonment. This prison is usually referred to as the "Black Hole of Calcutta". The Nawab's conduct is rightly blamed, but probably it was due to thoughtlessness rather than intentional cruelty. Clive recovered



Calcutta early in the following year and concluded peace with the Nawab.

Clive then captured the French settlement of Chander-nagore, about twenty-five miles above Calcutta, and this made Surajah join the French. Clive thereupon determined to dethrone him and place one Mir Jaffer in his place. The dispute was settled in 1757 by the battle of Plassey, in which Clive's three thousand men routed the Nawab's force of fifty thousand. This battle laid the foundation of British power in Bengal, and it was quickly followed by other victories which made Britain supreme in the south. By the storming of Masulipatam in 1760 the Northern Circars, a coast strip between Bengal and Madras, was won from the French, and Sir Eyre Coote's brilliant victory at Wandewash almost on the same day was followed by the capture of Pondicherry in 1761. Meanwhile Mir Jaffer had been replaced by another ruler, who rebelled and was joined by the Mogul emperor and the ruler of Oude, but Sir Hector Munro's victory at Buxar in 1764 made the emperor a prisoner and greatly increased the Company's influence in Oude.

### The Work of Warren Hastings

The foundations of British Indian administration were firmly laid by Warren Hastings, who became governor of Bengal in 1772, and was created governor-general of India by an act of the British parliament in 1774. His splendid reforms in the internal administration are not so well known as his relations with the other Indian rulers. He lent troops to the ruler of Oude to enable him to defeat a neighbouring people, and he extorted

large sums from the Rajah of Benares and the Begum or Queen-Mother of Oude. For these and other similar acts he was impeached by the House of Commons on his return in 1786. Edmund Burke and other brilliant orators led the attack, but after the trial had dragged on for seven years he was acquitted. Hastings conducted the first Mahratta war (1778-1781), which ended with little result, and he had to send troops to defend Madras against the hosts of Hyder Ali, ruler of the State of Mysore. Hyder Ali died during the war, and peace was concluded with his son Tippoo in 1784.

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## 13. The Indian Empire: History— III

### From Warren Hastings to the Mutiny

Lord Cornwallis—War with Tippoo—Lord Wellesley—Conquest of Mysore—Second Mahratta War—Victories of Sir Arthur Wellesley and General Lake—Third Mahratta War under Hastings—Peshwa deposed—First Burmese War—Assam annexed—Lord William Bentinck—Suttee and Thuggery suppressed—First Afghan War—British residents massacred—Disastrous retreat—Occupation of Cabul and final British retreat—Annexation of Sind—The Sikhs—Ranjit Singh—First Sikh War—Second Sikh War—Annexation of the Punjab—Lord Dalhousie—Second Burmese War—Annexation of Lower Burma—Annexation of Oude—Causes of the Mutiny—Beginning of the Mutiny—Sir John Lawrence—Nana Sahib and the Cawnpore Massacre—Siege of Lucknow—Death of Sir Henry Lawrence—Havelock and Outram's reinforcements—Sir Colin Campbell withdraws the Europeans—Recapture of Lucknow—John Nicholson and the Capture of Delhi—Capture of the Emperor—Further fighting in Oude and Central India—Disappearance of Nana Sahib.

### The Mahratta Power Overthrown

The successor of Hastings as governor-general was Lord Cornwallis, who held office from 1786 to 1793. He led a great army in 1790 against Tippoo, the ruler of Mysore, and with the assistance of the Nizam of the Deccan and of the Mahrattas he was able to force him to give up some territory and pay a large sum of money.

The next notable ruler of British India was the Marquis Wellesley, who governed during 1798-1805. At this time Napoleon had designs on India, and Tippoo was intriguing with the French. Wellesley secured the friendship of the Nizam and sent a large force against Mysore. Tippoo's capital, Seringapatam, was stormed by Sir David Baird in 1799, and Tippoo himself was found among the dead. The second Mahratta war (1802-1804) is memorable for brilliant victories won in the south by Sir Arthur Wellesley, afterwards the famous Duke of Wellington, brother of the governor-general, and in the north by General Lake. These campaigns greatly increased British power in India.

The Mahratta power was finally broken in the third Mahratta war, which took place under the Marquis of Hastings' rule. This war lasted a very short time, and was ended in 1818 by considerable annexations of territory. The Peshwa was removed to a place near Cawnpore, and was granted a large pension for life. The first war with Burma broke out in 1824, and was concluded in 1826 by a treaty which gave Assam to Britain. Lord William Bentinck's period of office as governor-general is memorable for the abolition of the cruel custom of *suttee* or widow-burning, to which we have already re-

ferred, and also for the suppression of the *thugs*, who thought they ought to strangle as many persons as possible.

### First Afghan War

In 1837 a British envoy was sent to Afghanistan to secure certain favours. When he returned unsuccessful, the governor-general determined to depose Dost Mohammed, the ruler of Afghanistan, and place his brother, Shah Shuja, on the throne. This was effected in 1839, and the capital, Cabul, was occupied by a British force. In 1841, however, the Afghans rose, and the British residents, Sir William Macnaghten and Sir Alexander Burnes, were assassinated. The occupying force decided to retreat to India, but of the 16,000 who left Cabul only one man, Dr. Brydon, reached Jelalabad, which was held by a force under Sir Robert Sale. The rest perished from the winter cold on the way, or were killed by the weapons of the Afghans. Two armies under Generals Pollock and Nott fought their way to Cabul in 1842 and destroyed its great bazaar in revenge for the crimes, but they immediately returned to India, leaving the throne in the possession of Dost Mohammed. Thus ended our disastrous interference in the internal affairs of Afghanistan.

### Conquest of Sind and the Punjab

*Sind*, a territory on the lower Indus, was annexed in 1843 after a short war, remembered chiefly for Sir Charles Napier's brilliant victory at Miani. A far more important struggle was that with the Sikhs, the first stage of which opened in 1845. The Sikhs were origi-

nally founded in the Punjab as a religious sect in the fifteenth century, but the decay of the Mogul empire gave them the opportunity of becoming a powerful political and military state. Their greatest ruler was Ranjit Singh, a staunch friend of the British, who died in 1839.

In 1845 a force of 60,000 Sikhs crossed the River Sutlej and invaded British territory. Sir Hugh Gough, in command of a British force, beat them in four keenly-contested battles, at Mudki, Ferozeshah, Aliwal, and Sobraon, and took their capital, Lahore. They were still, however, left partly independent under Dhulip Singh, son of Ranjit, but another outbreak took place in 1848. In the fiercely-fought battle of Chillianwalla the British lost 2400 officers and men, four guns, and the colours of three regiments, and Sir Charles Napier was sent to take over the command from Gough. Before Napier arrived, however, Gough beat the Sikhs decisively at Gujrat, and the *Punjab* was annexed in 1849.

### The Sepoy Mutiny

The second Sikh war occurred under the governor-generalship of Lord Dalhousie, who did much to improve the condition of the people of India. The short Burmese war of 1852 ended in the annexation of *Lower Burma* to British India, and in 1856, the last year of his administration, he annexed *Oude*. This last act was one of the causes of the terrible Sepoy mutiny, which broke out in 1857. The other causes of the mutiny are many, some of them seemingly small enough. The natives were alarmed by the introduction of steam-engines, telegraphs, and other symbols of western civili-



zation, and they were also dissatisfied with some features in the British system of government. Further, they came to know that the cartridges served out to some of the Sepoys were greased with the fat of the cow, an animal sacred to the Hindu, and with the lard of the pig, which is regarded as unclean both by Hindu and by Mohammedan.

The mutiny broke out at Meerut, in the North-Western Provinces, in May, 1857, and the rebels marched on Delhi, where the Mogul emperor was again raised by them to power. The revolt spread rapidly, and in the North-Western Provinces and Oude it became almost a national uprising against British rule. The Sikhs of the Punjab remained loyal, and thus Sir John Lawrence, who was in command there, was able to send forces to recapture Delhi.

### Cawnpore, Lucknow, and Delhi

The rebel Sepoys at Cawnpore were headed by Nana Sahib, the adopted son of the last Peshwa, who proclaimed himself Peshwa of the Mahrattas. The Europeans of the town, including many women and children, sustained a siege for nearly three weeks, and then surrendered on condition that they would be taken down the Ganges to Allahabad. When they had embarked, the rebels opened a deadly fire on them from the river banks and killed or captured all, except four men, who managed to escape. All the men were massacred, and the women and children prisoners met the same fate soon afterwards, shortly before the arrival of an avenging army under Sir Henry Havelock.

Meantime the Europeans at Lucknow had taken refuge

in the Residency, which had been fortified by Sir Henry Lawrence. Lawrence was killed early in the siege, but the garrison held out gallantly, and was soon strengthened by a relieving force under Havelock and Outram. The rebels were not finally compelled to give up the siege, however, until the arrival of Sir Colin Campbell with another force. Campbell withdrew all the Europeans, and abandoned Lucknow, but in the following spring it was reoccupied after hard fighting.

Meanwhile, heroic deeds were being done in the attempt to capture Delhi from the mutineers. The Punjab contingent under John Nicholson fought splendidly, and the city was at length taken, but Nicholson fell in the moment of victory. The Mogul emperor, last of his line, was captured and kept a state prisoner at Rangoon till his death. The relief of Lucknow and the recovery of Delhi broke the back of the mutiny, but fighting continued for some time, especially in Oude under Sir Colin Campbell and in Central India under Sir Hugh Rose. Nana Sahib escaped across the frontier and was never afterwards heard of.

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## 14. The Indian Empire: History—IV

### After the Mutiny

India transferred to direct Crown government—The Viceroy and Governor-General—Lord Canning—Lord Lytton—Queen Victoria proclaimed Empress of India—Second Afghan War—Change in frontier policy and its causes—Shere Ali's refusal to receive a British agent—War declared—Candahar occupied by Stewart—Roberts marches on Cabul

—Yakub Khan made Ameer—Murder of Cavagnari—Cabul occupied by Roberts—Stewart's march from Candahar to Cabul—Abdurrahman made Ameer—Ayub Khan's victory at Maiwand—Roberts's march to Candahar and his decisive victory—Death of Abdurrahman—Third Burmese War and annexation of Upper Burma—Plague and famine—Frontier wars.

### End of the Company

By an Act of Parliament, passed in 1858, India was transferred from the East India Company to the direct government of the British Crown. The Crown acts through a Secretary of State for India, and is represented in India by a Viceroy and Governor-General. The first viceroy was Lord Canning, who had shown great ability in dealing with the mutiny. Nothing very important occurred in the history of British India under Canning's immediate successors, but Lord Lytton's viceroyalty (1876-1880) is notable for two events: the proclamation of Queen Victoria as *Empress of India* at a great "durbar" held at Delhi in 1877, and the second Afghan war.

### Second Afghan War

After the disastrous result of Britain's first interference in Afghanistan the Indian Government left the affairs of that country alone for many years. Since the first war, however, Sind and the Punjab had been annexed, and thus the British frontier had been advanced right up to the borders of Afghanistan. Russia was at the same time steadily building up an empire in Central Asia, and gradually Indian statesmen came to look with suspicion on Russia's movements. They sought to maintain Afghanistan as a buffer-state under British influence and in British pay.

Shere Ali, the successor of Dost Mohammed, was entertained by the governor-general, Lord Mayo, and was for a time well-disposed to Britain, but he became estranged, and in 1878 refused to receive a British agent at Cabul, although he admitted one from Russia. Lord Lytton thereupon declared war, and three armies invaded Afghanistan. Sir Donald Stewart occupied Candahar in the south, and the other two forces, one of them under Sir Frederick (now Earl) Roberts, advanced towards Cabul. Shere Ali fled and died soon afterwards, and his son, Yakub Khan, was made Ameer or ruler by the British on condition of ceding part of his territory and admitting a British envoy. The envoy, Sir Louis Cavaignari, was murdered soon after his arrival, and the war broke out anew.

Sir Frederick Roberts was again sent against Cabul, which he occupied after some fighting, and Yakub Khan was removed to India. A rising of the Afghans made the British position in Cabul very precarious, and the situation was only partly relieved by Stewart's brilliant march from Candahar to Cabul, where he took over the command from Roberts. Abdurrahman, a nephew of Shere Ali, was made Ameer by the British in 1880, but ere long news came that Ayub Khan, a son of Shere Ali, had defeated a British force at Maiwand and was besieging Candahar. Roberts was sent against him with 10,000 men, and after a rapid march routed Ayub's forces near Candahar. Abdurrahman remained friendly to Britain throughout his reign, which ended with his death in 1901; so also did his successor, Habibullah Khan, who was assassinated on February 20, 1919. The present Amir has not shown himself so friendly.

### Recent History

Few later events in Indian history require much notice. War was declared against King Theebaw of *Burma* in 1885. His capital, Mandalay, was occupied, and his country was annexed to British India in 1886. Much has been done in recent years for the development of the resources of India, and important steps have been taken towards training the Indian people for self-government. The effect of the measures taken to improve the condition of the people was shown, when the World War broke out in 1914, by the loyalty and enthusiasm with which all classes of the people of India threw themselves into the defence of the Empire.

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## 15. The Indian Empire—I

### Natural and Political Divisions, Mountains, Rivers

The great political divisions of India—Native states—Ceylon and Aden—Shape of India—Area and population—Northern and Southern India—The three great river systems of Northern India—Towns in the Ganges Valley—Himalayas—Other mountains of the north—Mountains of the Deccan—Rivers of the Deccan—Burmese rivers and towns.

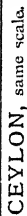
### Political Divisions

For the purposes of administration the Indian Empire is now divided into fifteen administrations, of which nine are under *Governors* and six under *Chief Commissioners*. These, of course, are subject to the Government

of India, the supreme authority. The administrations under Governors are: (1) Bombay, along the west coast of southern India; (2) Madras, along the east coast; (3) Assam, in the north-east; (4) Bengal, in the lower valleys of the Ganges and Brahmaputra; (5) Bihar and Orissa, to the south-west of Bengal; (6) the United Provinces of Agra and Oudh, in the upper valley of the Ganges; (7) the Punjab, in the valley of the Indus; (8) the Central Provinces and Berar, to the north of the Deccan; (9) Burma, in Further India.

The six administrations under Chief Commissioners are: (1) the North-west Frontier Province, to the north-west of the Punjab; (2) Baluchistan, west of India proper; (3) Ajmere Merwara, in the centre of Rajputana; (4) Coorg, between Madras and Bombay; (5) Delhi, on the Jumna, the new capital of the Indian Empire; (6) the Andaman and Nicobar Islands, in the Bay of Bengal. Most of the great provinces have several native states attached to them. These states are still governed by native rulers, but they are more or less under the control of British officials, and many of them pay an annual tribute to the British authorities. In addition there are the large native states of Hyderabad and Mysore, in southern India; Baroda, in the north of Bombay province; Kashmir, in the extreme north of India; Nepaul, Sikkim, and Bhutan, in the Himalayas; the large group of states called Rajputana, between Bombay and the Punjab; and the states of Central India, to the north of the Central Provinces. Ceylon is not governed as part of India, but Aden, in southern Arabia, is included in the Bombay province.

English Miles



### Natural Divisions of India Proper

In some ways India, apart from Burma, may be regarded as a huge triangle with the Himalaya Mountains as the base and the coasts on the Arabian Sea and the Bay of Bengal as the other two sides. The total area of the whole Indian Empire, Burma included, is about equal to that of Europe without Russia, and its population of three hundred millions is seven times that of the United Kingdom. The Vindhya Mountains and other ranges in the centre divide Northern India, or India proper, from Southern India, or the Deccan.

*Northern India* consists chiefly of three great river systems, namely, that of the Indus, in the Punjab and Sind, with the Sutlej and other large tributaries; that of the Ganges, the sacred river of the Hindus, with the Jumna and other large affluents, which flows eastwards through the United Provinces and Bengal to the Bay of Bengal; and that of the Brahmaputra, a river which rises on the northern slope of the Himalayas and pierces through the range at its eastern end to become merged in the delta of the Ganges. The valley of the Ganges is the most populous part of India, and contains many great cities, such as Delhi and Agra, on the Jumna; Cawnpore, on the upper Ganges; Allahabad, at the meeting-place of the Ganges and Jumna; Benares, Patna, and Calcutta, on the lower Ganges.

The most important feature in the physical geography of northern India is undoubtedly the Himalaya Mountains, the greatest range in the world, containing in Mount Everest the highest peak known. On the Afghan frontier there is a lower series of hills, such as the Safed



Kon, the Sulainan Mountains, and the Hala Mountains, and in the centre of Rajputana there are the Aravalli Hills.

The *Deccan* or *Southern India* is a triangular plateau, bounded on the north by the Vindhya Mountains and other ranges, on the east by the low and broken chain of heights called the Eastern Ghats, and on the west by the higher range of the Western Ghats. At the southern apex of the triangle, where the two Ghat systems approach each other, there are the Nilgiri and the Cardamom Hills. A strip of lower coast-land borders the Deccan both on the east and on the west, but on the west coast it is much narrower than on the east.

The great rivers of the Deccan mostly flow eastwards from the Western Ghats to the Bay of Bengal, the chief of them being the Godavari, the Kistna, and the Cauvery. Only two rivers of importance flow westwards, namely, the Narbada and the Tapti, both near the northern edge of the plateau. The Mahanadi is the most northerly eastward-flowing river of importance. The rivers of the south are of much less value for navigation than those of the north, and the two chief towns of the south, Bombay and Madras, are not built on rivers at all.

### Burma

The central part of *Burma* is the valley of the River Irawadi, on whose banks stand the towns of Mandalay and Rangoon. On both sides of this valley there are ranges of hills running southwards from the eastern Himalayas. To the east of the Irawadi there is another important river, the Salwin, at whose mouth the town of Martaban and the port of Moulmein are built.

## 16. The Indian Empire: Geography—II

### Climate, Productions, Trade

Great diversity of climate—Need of irrigation in parts—Great variety of annual and vegetable products—Principal crops—Fruits—Forest—Wild animals—Domestic animals—Principal minerals—Railways and canals—Irrigation by tanks and wells—Chief seaports—Capital cities—Native and European manufactures.

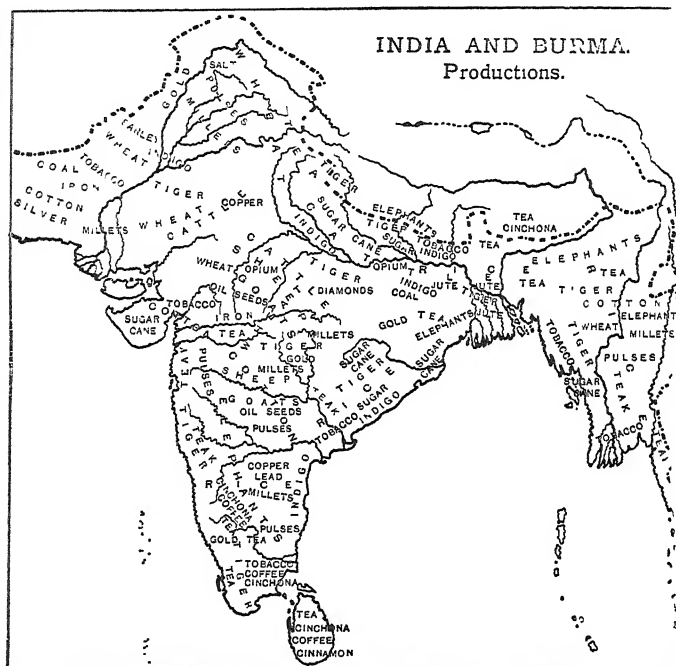
#### Climate of India

India, as one might suppose from its great size and its varied surface, has great diversity of climate, but there is generally a hot, a cool, and a rainy season. In the south of the peninsula and in Ceylon the climate is tropical, and the heat is very great. The summer heat is great, indeed, almost everywhere. The central and southern plains, especially in summer, are sultry, unhealthy, and in part barren. Many districts are apt to suffer from want of rain, and hence famine may prevail over large areas. Cultivation can only be carried on in many places by means of irrigation. In the Himalayas a temperate climate, and higher up an Alpine climate, prevails. In the hot season many of the smaller streams run dry.

#### Chief Crops of India

With its great variation in climate it is not surprising to find a great variety in the products of India. The chief rice-growing provinces are Bengal, Eastern Bengal and Assam, and Burma, and wheat is the most important crop in the Punjab. In the United Provinces rice and

wheat are grown to about the same extent, and barley is also of great importance. Rice is the staple food in a considerable part of India, but over a still greater area the different kinds of millet are the ordinary food of the



people. The millets are grown chiefly in Bombay, Madras, the United Provinces, and the Central Provinces. Maize is pretty widely cultivated in Bengal, the United Provinces, and other districts of northern India.

Oil-seeds, especially linseed and sesamum, are an important crop in some parts, especially Bengal and the

Central Provinces, and various condiments and spices are extensively grown. Bombay Presidency and Berar are the great cotton-growing regions, but Bengal grows nearly all the jute. Sugar-cane is a valuable crop in the United Provinces and Bengal especially, but indigo is less profitable than it once was. The cultivation of opium is limited by law, so far as the British districts are concerned, to certain parts of Bengal and the United Provinces. Eastern Bengal and Assam is the great tea region. Coffee-culture is confined to the extreme south. Eastern Bengal has the greatest area under tobacco.

European fruits abound in many parts; and among the native and cultivated fruits are the citron, pomegranate, plantain, mango, lime, orange, pine-apple, almond, and fig. India has also vast forests of valuable timber-trees, of which the most useful are teak, the chief tree of the Western Ghats and Burma, the sal of the eastern and central Himalayas, and the deodar of the western Himalayas. Bamboo, tun, sissou, and sandal-wood are also worthy of mention.

### Animals

The wild animals and birds of India make a long list, from boars, bears, elephants, lions (now rare), and tigers, down to cats, rats, and mice. The domestic animals are oxen, buffaloes, sheep, camels, elephants, horses, mules, and goats. Snakes and other reptiles are common, and some of them are very destructive to human life.

### Mineral Wealth

India was long ago celebrated for its mineral treasures: gold, silver, copper, iron, salt, diamonds and other precious

stones; but the mines of India have never been worked in any but a poor and ineffectual way under native rulers. Under British rule coal-mining has made considerable progress, chiefly in Bengal and Central India. Gold-mines are also worked, chiefly in Mysore. Salt is obtained by evaporation from the water of the sea and salt lakes, and a large quantity is quarried in the Salt Range of the northern Punjab. Burma yields much petroleum, and the production of rubies and jade in that province is worthy of mention.

### Railways and Canals

There are over 38,000 miles of railway in India, a mileage which, for the size of the country, is not nearly what it ought to be. India is fifteen times as large as the British Isles, and yet Britain has nearly as great a mileage of railway. There are canals and many natural water-ways in India besides the railways, but much more will yet have to be done to extend means of transport and communication. The canals, even those which are suitable for navigation, are chiefly intended as irrigation works for distributing the waters of the rivers over cultivated land. In other places irrigation is effected by means of large tanks and wells, which retain water for use in seasons of deficient rainfall.

### Seaports and Towns

The chief seaports of India are Calcutta, Bombay, Madras, Rangoon (in Burma), and Karachi, the last being near the mouth of the Indus. Calcutta is the capital of Bengal. Bombay and Madras are the capitals

of their presidencies, and the seat of government of the Punjab is at Lahore. Allahabad is the head-quarters of the United Provinces, Dacca of Eastern Bengal and Assam, and Peshawar of the North-West Frontier Province.



Native Street in an Indian City

Photo York & Son

About thirty Indian towns have a population of over 100,000. There are many native manufactures of considerable artistic value and of great antiquity, and in recent times European factories have been established for making cotton, jute, and woollen goods, paper, and other articles

## 17. Ceylon and other British Possessions in Asia

British possessions in Asia enumerated—Acquisition of Ceylon—Religion of Ceylon—Adam's Bridge—Pedrotallagalla—Climate of Ceylon—Products of Ceylon—Towns and ports—Straits Settlements—Federated Malay States—Singapore—Borneo—British North Borneo—Brunei—Sarawak—Towns of British Borneo—Labuan—Aden—Kuria Muria Islands—Bahrein Islands—Hong-Kong.

### British Asia

The Indian Empire, which includes Burma, the Andaman, Nicobar, and other groups of islands, is the greatest, but not the only, British possession in Asia. The island of *Ceylon*, lying immediately to the south of the Indian peninsula, belongs to Britain, as do also the *Straits Settlements*, a group of small possessions on the Straits of Malacca, between Sumatra and the Malay Peninsula; *Hong-Kong*, an island at the mouth of the Canton River, in China; *Wei-hai-wei*, a small territory in northern China; a part of *Borneo*; the *Bahrein Islands*, in the Persian Gulf, the mandated territories of *Iraq*, *Palestine*, and *Trans-Jordan*; and *Aden*, at the south-west corner of Arabia, together with the neighbouring island of *Perim* and the *Kuria Muria Islands*. *Cyprus*, in the eastern Mediterranean, governed by Britain since 1878, was annexed in 1914.

### Ceylon

The Portuguese settled in Ceylon early in the sixteenth century, but in the following century the island passed to the Dutch, from whom it was taken by Britain in 1796. The central part of the island, however, re-





and in Pedrotallagalla they reach a height above sea-level more than twice that of Cairngorm. The climate is tropical, great heat and a heavy rainfall being its main features; but on the lofty central plateau it is much more temperate.

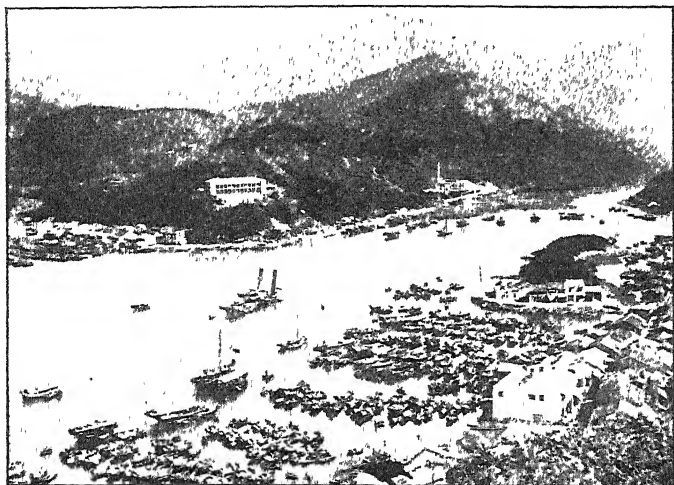
Rice and other grains are cultivated, but the most valuable vegetable product of the island is tea. Coffee is now of small importance, but cocoa-culture is advancing. Cocoa-nuts, cinnamon, and tobacco are other valuable productions, and the forests are a source of considerable wealth. Ceylon is rich in minerals, the chief being plumbago or graphite and precious stones. Its pearl-fisheries are famous, but their yield is very variable. The capital is the seaport of Colombo. Other ports are Galle and Jaffna, and Kandy is the principal inland town.

### Singapore

The *Straits Settlements* consist of the island of Singapore, at the southern end of the Malay Peninsula; the territory of Malacca, on the west coast of the peninsula, opposite Sumatra; and the island of Penang, farther north, with Wellesley Province and other dependencies. These belong absolutely to Britain, and in addition Britain exercises a protectorate over several adjacent native states, four of which have been joined together under the name of the Federated Malay States; five others are not federated. Singapore, the largest town of the Settlements, has a very large transit trade, and the federated states now export considerable quantities of rubber, tin, and gold.

## Borneo and other Possessions

The great island of Borneo in the Malay Archipelago is divided between Britain and Holland. The British part is at present governed in three distinct sections, namely, *British North Borneo*, which is under a commercial company; *Brunei*, where the native sultan is



Victoria Harbour, Hong-Kong

Photo N P Edwards

still kept in power; and *Sarawak*, which is governed by a British rajah. All the territories are still mostly undeveloped. The capital of North Borneo is Sandakan; of Brunei, Brunei; and of Sarawak, Kuching. The island of Labuan, which yields a fair amount of coal, is now under the governor of the Straits Settlements.

*Aden*, in Arabia, is a fortified coaling-station attached

to the Bombay Government, and the *Kuria Muria Islands* have deposits of guano. The *Bahrein Islands* in the Persian Gulf have a valuable pearl-fishery, and *Hong-Kong*, in China, has a very large transit trade

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## 18. Australasia: History—I

### Discovery and Exploration

Portuguese exploration—Abel Tasman—William Dampier—Bougainville—Carteret and Wallis—Captain Cook's first voyage—His second voyage—His third voyage and death—Bligh and the *Bounty* mutineers—Laperouse's fate—George Vancouver—George Bass—Matthew Flinders—Sydney settled—Blue Mountains crossed—Sturt's explorations—Grey—Eyre—McDouall Stuart—Burke—Leichhardt.

#### Tasman

The Portuguese appear to have discovered the western part of the island-continent of Australia in the sixteenth century, but the honour of first making Australasia known to western Europe belongs to the Dutch. In 1642 Abel Tasman set out from Batavia, in Java, on an exploring expedition, and before his return in the following year he discovered Tasmania (which he called Van Diemen's Land in honour of the Dutch governor of the East Indies), New Zealand, the Tonga Islands, and the Fiji Islands, all now belonging to Britain.

An English buccaneer, William Dampier, added to our knowledge of the seas about New Guinea in the closing years of the seventeenth century. A Frenchman, Bougainville, who had served in the battle of Quebec, explored the Solomon and neighbouring islands in 1766 and the

immediately succeeding years, and two Englishmen Philip Carteret and Samuel Wallis, at the same time crossed the Pacific from east to west, discovering many islands on the way.

### Captain Cook

A greater explorer than any of these, however, was the famous Captain James Cook. In 1768 he left England in command of a scientific expedition, which he took to Tahiti, in the Society Islands, to observe the passage of the planet Venus across the sun's disc. When this work was done, he sailed westwards to New Zealand, which he circumnavigated and charted, and then proceeded along the east coast of Australia, which he carefully surveyed. From a fancied resemblance of the coast to that of southern Wales he named the country New South Wales.

He returned to England in 1771, but next year he made another voyage to the Pacific Ocean. He sailed well to the south in order to ascertain whether there was really, as men then supposed, a great southern continent, but he also visited the New Hebrides and discovered New Caledonia. He was home again in 1775, and in 1776 he set out on his last voyage of exploration. His aim this time was to sail from the Pacific to the Atlantic Ocean by a passage to the north. He reached the Sandwich or Hawaiian Islands in 1777, and sailed thence along the North American coast to Behring Strait, making careful observations on the way. He had to give up the attempt to reach the Atlantic, and accordingly returned to the Sandwich Islands. He had been on friendly terms with the natives of these islands, but

unfortunately something provoked their rage, and they set upon him and killed him.

### The "Bounty"

In 1787 a vessel, named the *Bounty* was sent to the Pacific under the command of William Bligh. It sailed to Tahiti, but soon after leaving that island the greater number of the crew mutinied. They set Bligh and a few companions adrift in a small boat, and returned in the ship to Tahiti. Bligh succeeded in reaching civilized territory in safety, and afterwards did good service. Some of the mutineers remained on the Society Islands, whilst others, accompanied by native wives and servants, settled on the small, uninhabited Pitcairn Island. Their descendants are still living there, but some of them were at one time removed to Norfolk Island, much nearer Australia.

### Other Navigators

A Frenchman named Lapérouse, who had fought in the Canadian wars, sailed eastwards from Australia in 1788 to explore the islands of the great ocean. For many years he disappeared totally and nothing was known of his fate, but it was afterwards ascertained that his vessels had been wrecked near the New Hebrides.

George Vancouver, who had served under Cook, explored the coasts of south-western Australia and New Zealand in 1791 on his way to western Canada, and in 1798 a surgeon named George Bass sailed through the strait which now bears his name, thus proving for the first time that Tasmania was separate from Australia. Matthew Flinders in the opening years of the nineteenth

century made a very careful survey of the southern and northern coasts of Australia.

### The Interior of Australia

The exploration of the interior of the island of Australia was a much more arduous task than the surveying of its coasts. A settlement of convicts was made on the site of the present Sydney in 1788, but it was not till 1813 that the Blue Mountains near the coast were crossed by any of the settlers. Charles Sturt discovered the Darling River in 1828, and soon afterwards descended the Murrumbidgee to its junction with the Murray, and the Murray to Lake Alexandrina near its mouth. These journeys disproved the opinion that the centre of the island was a great inland sea; but Sturt, in attempting to cross the continent from south to north in 1844, found it an almost waterless desert.

Grey made a hazardous journey in Western Australia, and Eyre succeeded with the utmost difficulty in passing through the country immediately north of the great Bight. John M'Douall Stuart crossed the continent from south to north in 1862, and his route is now followed by the telegraph line. This feat had been performed a year earlier by Robert O'Hara Burke, but the whole of his party, except one man, perished miserably on the return journey. Another bold explorer, Dr. Leichhardt, who set out from Queensland in 1847, disappeared with all his party in the interior, and no trace of him has ever been found.

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## 19. Australasia: History—II

### Formation and Development of Colonies

Sydney founded—Transportation—Self-government in New South Wales—Melbourne founded—Victoria and Queensland separated—Effect on South Australia and Tasmania of gold discoveries in Victoria—South Australia colonized—Adelaide founded—Sir George Grey—Copper found—Self-government in South Australia—Tasmania founded—Transportation ceased—Self-government—Name changed—Sir John Franklin—Fremantle founded—Transportation to Western Australia—Gold discovered—Self-government granted—British New Guinea—Wellington, N.Z., settled—New Zealand a separate colony—Auckland founded—Treaty with the Maoris—Dunedin and Christchurch—Maori wars—Sir George Grey—Self-government—Radical legislation—The Commonwealth—New Zealand not a member.

#### New South Wales

The oldest of the Australian colonies is *New South Wales*, in which the first settlement, now the great city of Sydney, was made in 1788, the year before the outbreak of the French Revolution. This settlement was a convict one, and for many years persons sentenced to transportation were sent to the colony. Free settlers were afterwards admitted, and in 1840 transportation ceased, and a later attempt to revive it was defeated by the determination of the colonists. Representative institutions were introduced in 1843, a few years after the passing of the Union Act in Canada, and full responsible government came later.

#### Victoria and Queensland

The present colonies of *Victoria* and *Queensland* were included in New South Wales till past the middle of last

century. Melbourne, the capital of the former, was founded in 1835, and received in 1837 its present name, after the British premier of the time. As the colony grew in importance and population a movement for separation from New South Wales arose, and after the great gold discoveries about 1850 the home government in 1851 gave it a separate government. Queensland was not separated till 1859. Both Victoria and Queensland were named in honour of the late Queen Victoria.

### South Australia

The discovery of gold in Victoria in the middle of last century acted harmfully on the colonies of Tasmania and South Australia, for great numbers of their inhabitants flocked to the diggings. *South Australia* was founded by a colonizing company which sent out a body of settlers in 1836. These founded the city of Adelaide, which they named in honour of the queen of William IV. The careful administration of Sir George Grey and the discovery of rich copper deposits established the colony on a prosperous basis. Responsible government was introduced in 1856. In 1911 *The Northern Territory of Australia*, with an area of fully 500,000 square miles, was taken over by the Commonwealth.

### Tasmania

*Tasmania* was started as a convict settlement in 1803, and in 1824 it became a separate colony. Transportation ceased in 1853 owing to the protests of the inhabitants. Representative government followed two years later, and about the same time the name of the colony was changed from Van Diemen's Land to Tasmania, thus



honouring the great Dutch explorer of the seventeenth century. One of its governors was the Sir John Franklin who was lost in the Arctic Seas.

### Western Australia and New Guinea

*Western Australia* was earlier settled than Victoria or South Australia, but in development it lagged behind all the other colonies till recently. A colony was established at Fremantle on the Swan River in 1829, but so slow was its progress that the inhabitants actually asked for convicts from the home country about the time when the eastern colonies were rejecting them. Their request was granted, and transportation to Western Australia continued till 1868. The discovery of rich gold-fields in recent years has greatly hastened the progress of the colony. It was granted responsible government in 1890. British New Guinea is now, together with Kaiser Wilhelm's Land, included in the Commonwealth of Australia as the Territory of Papua. The Bismarck Archipelago, the Solomon Islands, &c, are also administered by the Commonwealth.

### New Zealand

*New Zealand* was occupied in 1840, when the present capital, Wellington, was settled, and about a year later it was separated from the government of New South Wales. Auckland was established very shortly after Wellington, and a treaty was made with the chiefs of the natives or Maoris, by which the sovereignty of the islands was ceded to Britain. Other settlements followed, the most notable being that at Dunedin in 1848, and that at Christchurch in 1850.

There were two keenly fought wars with the Maoris, but the natives now live peaceably in their own part of the country, and they send members to the parliament of the colony. The colony owed much in its earlier days to an able governor, Sir George Grey, whom we have already met as an explorer in Western Australia and a governor of South Australia. New Zealand obtained representative self-government in 1852. All the great Australasian colonies, but notably New Zealand, have passed social and political laws of a very radical character.

### The Commonwealth

On the first day of the present century the *Commonwealth of Australia* was proclaimed. This is a federation of the six colonies or states, New South Wales, Victoria, Queensland, Tasmania, South Australia, and Western Australia. Each of these states remains independent for the purposes of its own administration, but they constitute a single state for all common purposes. There are parliaments and ministries in the separate states, and there is also a federal parliament and a federal ministry. New Zealand may some day join the federation, but at present she holds aloof.

### Additions since 1914

Kaiser Wilhelm's Land, Bismarck Archipelago, the German part of the Solomon Islands, were occupied by an Australian force in 1914, and are now administered by the Commonwealth. The German Samoan Islands were occupied by the British in 1914, and are now administered by New Zealand.

## 20. Australia and Tasmania: Geography—I

### Political Divisions and Physical Features

The States of the Commonwealth—Area and population—Interior of Australia—Mountains of Australia—The Murray and its tributaries—Eastern coast rivers—Lakes—Barrier Reef—Harbours and capital cities—Tasmania—Rivers and towns—Bass Strait.

### Area and Population

Of the six states which form the Commonwealth of Australia five are included in the great island of Australia. Three, Queensland, New South Wales, and Victoria, together occupy the eastern third; South Australia, including its Northern Territory, occupies the central third; and Western Australia, the largest state, comprises the western third. The whole island is about twenty-five times as large as the British Islands, but its population is rather larger than that of either Scotland or Ireland, being only a little less than 6,000,000. Tasmania, the sixth state of the federation, is about equal to Scotland without the county of Argyll, being thus a little larger than Ceylon. Its population, however, is not much greater than that of Dundee.

### Physical Character of Australia

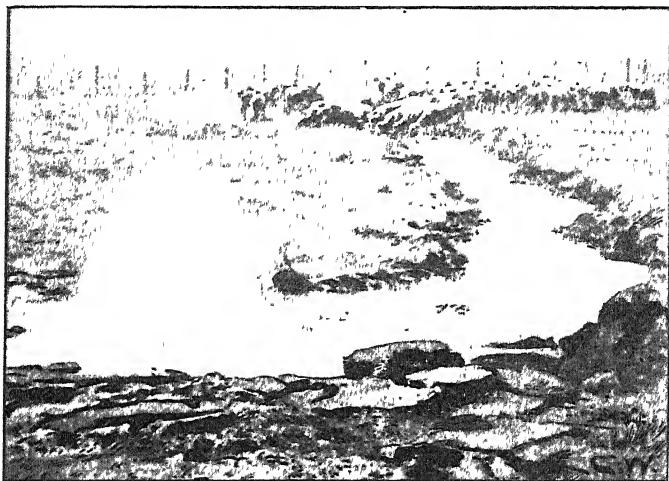
Australia is best regarded as a distinct continent. It has a few low mountain ranges in the interior, but all its greatest ranges are near the coasts, especially in the east and south-east. The interior is a plateau of varying elevation, being lowest in the region of the central salt lakes

than to the west of them. The plains of the interior are mostly very dry and barren, some parts being apparently useless desert. In recent years, however, water has been found at great depths and brought to the surface by artesian wells, and possibly a portion of the central region may in this way be made habitable.



The mountains of Victoria and New South Wales have different names in different parts, such as Australian Alps, Blue Mountains, &c. The highest summit in them and in all Australia is Mount Kosciusko, which is about two-thirds higher than Ben Nevis. Many of the rivers of the country run dry during part of the year, especially those which flow towards the central deserts. Few of the rivers are of much commercial value, though the Murray, with its tributaries Darling and Murrumbidgee,

forms an extensive river system. These rise on the western slopes of the great range in the east, and their united waters are poured into the Southern Ocean in the east of South Australia. The rivers rising on the east slopes of the range are necessarily shorter, but some of



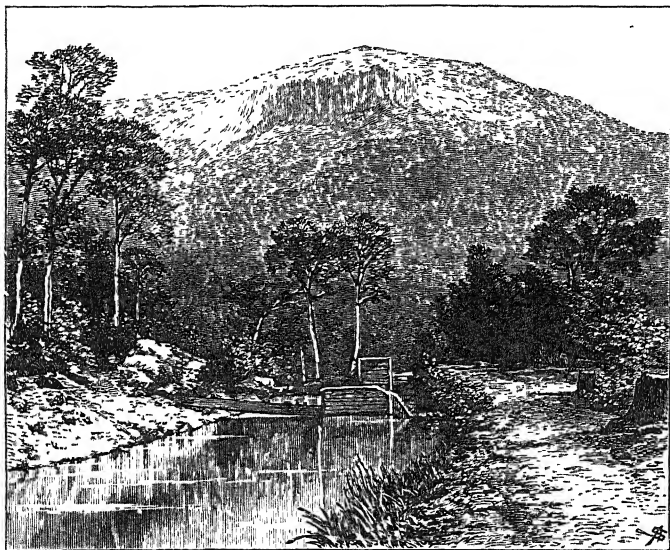
An Artesian Well in Australia

them are much longer than the longest British streams, and they are always well filled with water. The largest lakes are the salt lakes or swamps of the interior, such as Amadeus, Torrens, and Eyre.

### Capital Cities

A great part of the eastern coast is protected by the Barrier Reef, one of the most gigantic works of the little coral animals. The coasts are indented by numerous fine

bays and harbours, such as Port Jackson, on which stands Sydney, the capital of New South Wales; Port Phillip, with Melbourne, capital of Victoria; Moreton Bay, with Brisbane, capital of Queensland; and the Gulf of St. Vincent, near which is Adelaide, capital of South Aus-



Mount Wellington, Tasmania

tralia. Perth, on the Swan River, is the capital of Western Australia. The capital for the Commonwealth is Canberra, in federal territory.

### Tasmania

Tasmania is a very mountainous island, with scenery not unlike that of Scotland. It has several beautiful

mountain lakes, and its largest rivers are the Derwent, on which is the capital, Hobart, and the Tamar, with Launceston, the only other place of any size. Bass Strait separates it from Australia.

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## 21. Australia and Tasmania: Geography—II

### Climate, Productions, Trade

Climate—Hot winds—Drought—Dryness—Sheep-pasturing—Other animals—Cereals—Vines and wines—Fruits—Gold and silver—Copper, tin, coal, &c.—Forests—Valuable kinds of timber—Manufactures—Railways.

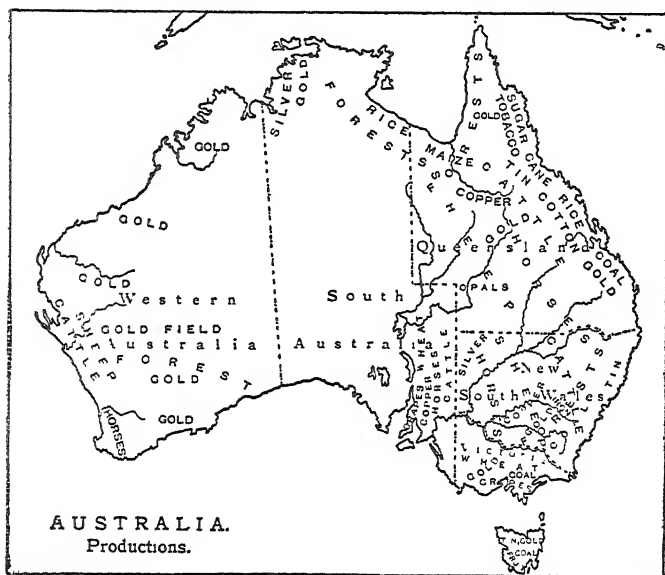
#### Climate

The climate of Australia is widely different in different parts. In the north it is tropical, with a very high temperature, and heavy rains during the wet season. In New South Wales and Victoria it is warm and dry, but very healthy. The heat is somewhat oppressive, especially when hot winds blow from the interior deserts, but on the coast it is moderated by cool sea-breezes. Much damage is often caused by prolonged droughts. In the south-west part of the island the climate is very pleasant, though warm. The high temperatures of Australia are made tolerable by the dryness of the climate. The climate of Tasmania is very genial and invigorating.

#### Animals and Vegetable Products

The two great industries of the Commonwealth are sheep-pasturing and mining. The great plains to the

west of the eastern mountain range, in New South Wales and Queensland especially, are amongst the finest pasture-lands in the world. Besides sheep, large numbers of horned cattle, horses, and pigs are reared. Considerable areas in all the states are under wheat and other cereals,



maize being of importance in Queensland, which also grows sugar-cane successfully. Vines succeed well in South Australia, New South Wales, and Victoria, and the wines of the first two are now well known in the home-country. Australia has few native fruits of any value, but the ordinary British fruits, as well as many requiring a semi-tropical climate, are grown to perfection. The fruit and jam industry is a leading one in Tasmania.



## Minerals

The mineral riches of Australia are exceedingly great. Gold and silver are exported in large quantities, the leading states for the former being Western Australia, Victoria, and Queensland, whilst New South Wales produces most of the latter. Copper is also abundant, especially in South Australia, New South Wales, and Tasmania, and tin is produced in large quantities by Tasmania especially. Other metals are also worked, and the extensive coal-beds of New South Wales are steadily growing in importance. The discoveries of gold in Victoria and New South Wales about 1850 greatly benefited the country by attracting inhabitants.

## Forests

The forests of Australia are found mainly on the eastern mountains and along parts of the northern and western coasts. They contain some very valuable varieties of timber not found anywhere else. Such are the various kinds of Eucalyptus or gum-trees and several kinds of Acacia or wattles. Certain of the gum-trees are now planted in other countries to reclaim tracts of land otherwise of little use, and one species, the jarrah of Western Australia, is of extraordinary durability and proof against the attacks of the destructive ship-worm. The Huon pine of Tasmania is also valuable for boat-building, and the sandal-wood of Western Australia is an important export.

## Manufactures and Railways

The manufactures are not yet of great importance, and are mostly intended for supplying home needs and not for export. The settled parts of the country are well supplied with railways, and a railway line has been projected right through the heart of the country from south to north.

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## 22. New Zealand: Geography

Divisions of New Zealand—Area and population—Mountains of North Island—Volcanic activity—Lake Taupo—Rivers of North Island—Character of South Island—Southern Alps—Mount Cook—Lakes of South Island—Clutha river—The sounds—Milford Sound and Sutherland Fall—Climate—Forests—Kauri—Pasture-lands—Agriculture—Minerals—Towns—Railways—Government—Maoris represented.

### Area and Population

New Zealand consists of two large and several small islands. The largest island, South or Middle Island, is almost exactly equal in area to England and Wales; and the other chief island, North Island, is about equal to Scotland together with half of Ireland. The population of the whole country, about 1,300,000, is almost the same as that of the city of Glasgow proper. Stewart Island, to the south of South Island, is about two and a half times the size of Anglesey, but its population is only two or three hundred.

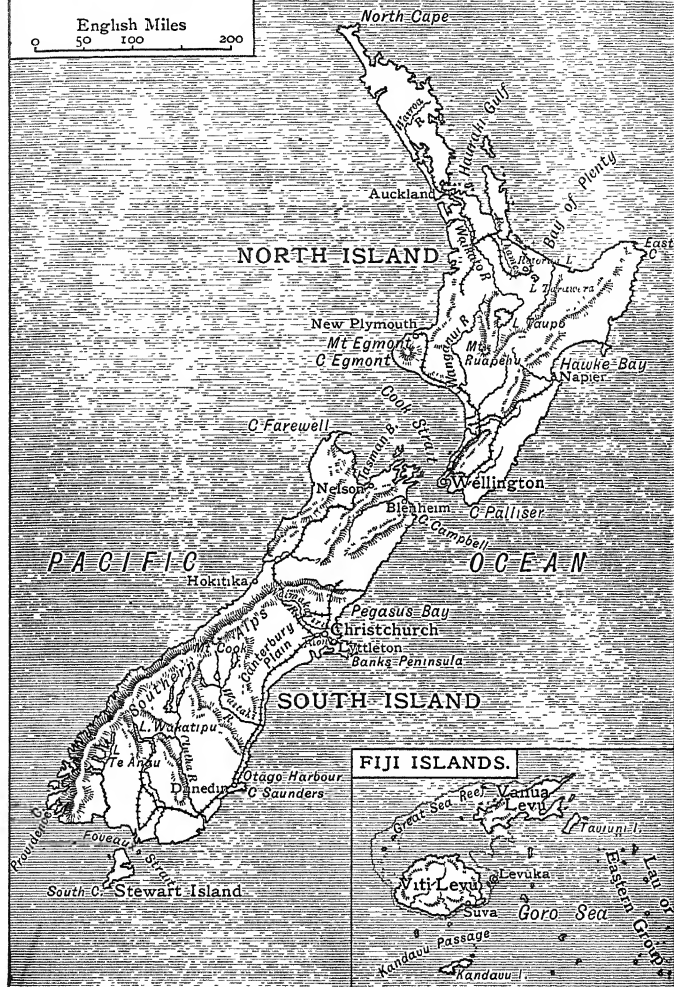
### North Island

The physical features of New Zealand are far grander than those of Australia. The central part of *North*

# NEW ZEALAND.

English Miles

0 50 100 200



*Island* is traversed by several ranges of mountains, culminating in Ruapehu, which is more than twice the height of Ben Nevis, and including some active volcanoes. Mount Egmont, near the west coast, though not the highest peak in the island, is in many respects the finest. Evidences of past and present volcanic activity are abundant in the central districts, where the hot lakes, springs, and geysers give a peculiarly striking character to the scenery. This region is much resorted to now by tourists and by invalids in search of health. The largest lake of the island and of New Zealand is Lake Taupo, almost exactly in the centre. Its area is nearly as great as that of the Lake of Geneva, and it is of enormous depth. The longest rivers of North Island are the Waikato, which flows north out of Lake Taupo, and the Wanganui, flowing south.

### South Island

*South Island* is not so compact as North Island, but has something of the shape of a rectangle broadening at the south end. Its backbone is the great range of the Southern Alps, which traverses almost its entire length. The range is much nearer the west than the east coast, and branches into several ranges in the northern and southern parts of the island. Its highest peaks are covered with snow all the year round, and among them are many glaciers of great size and of the utmost sublimity. The highest summit of all, Mount Cook, reaches an elevation of more than 12,000 feet above the level of the sea.

The lakes of the South Island are numerous, especially in the south, and many of them are of exquisite beauty.



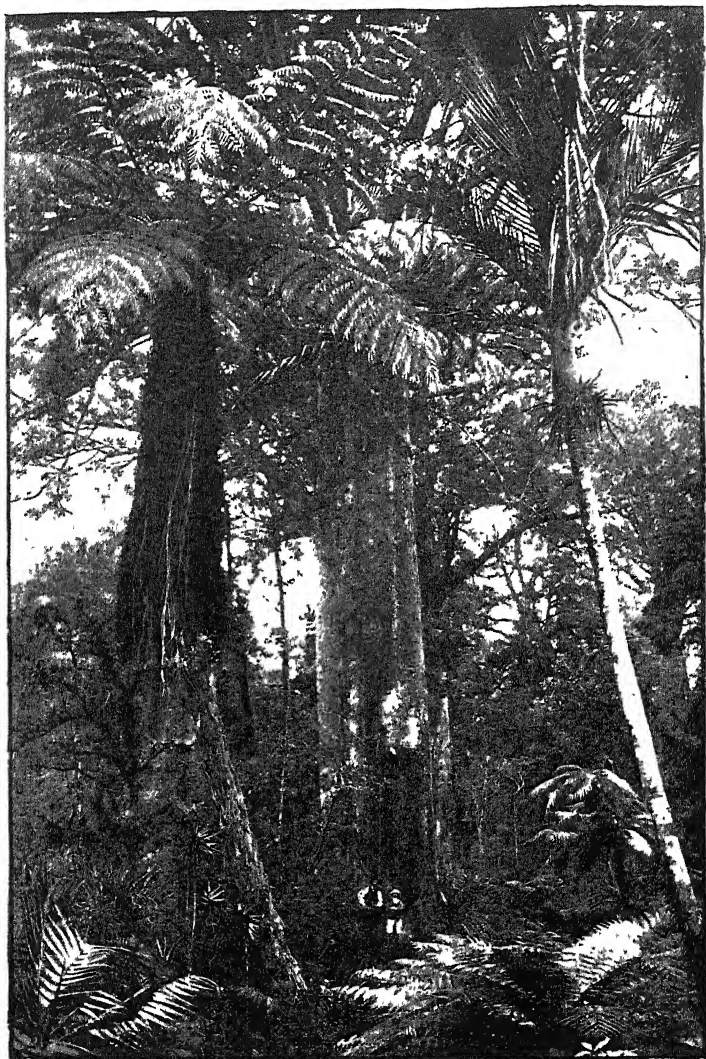
The largest are Te Anau and Wakatipu, both of striking shape. The longest river of South Island is the Clutha, which rises in the central mountains and flows southward to the ocean. Besides its grand mountain and lake scenery, South Island has on its south-west coast a magnificent series of fiords or sounds, which are not surpassed in sublimity in any other part of the world. Near one of them, Milford Sound, there is a splendid waterfall of very great height, known as Sutherland Fall.

### Climate and Products

The climate of New Zealand is most healthful, its chief drawback being excessive windiness. The forests cover a large area in both islands, and yield valuable timber trees found in no other country, especially the well-known kauri pine, from which kauri gum is obtained. There are fine pasture-lands in both islands, but the Canterbury plains of South Island are specially favourable for sheep-rearing. Much of the soil is fertile, and the ordinary cereals are cultivated with success. Gold, silver, and coal are the principal minerals at present worked, but the colony also produces iron, copper, and other metals, besides various other non-metallic minerals.

### Towns, &c.

The largest towns of New Zealand are Wellington, the capital, and Auckland, in North Island; Christchurch and Dunedin, in South Island. There are now several railway lines in both islands, the total length being over 3200 miles. The government of the colony is very democratic, and the Maoris, or native inhabitants, who



Scene in a New Zealand Forest, showing Kauri Pine, Palms, and Tree Ferns

are almost all found in the North Island, now elect representatives to parliament.

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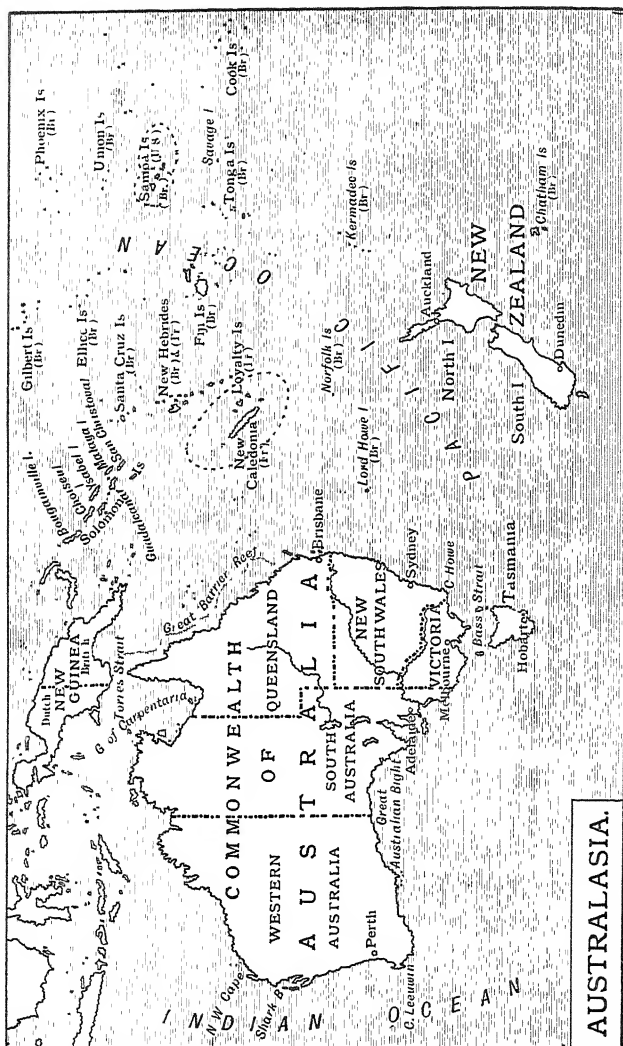
## 23. British Possessions in the Pacific Ocean

Size of New Guinea—Political partition—Owen Stanley range—Fly river—Port Moresby—Natural wealth of New Guinea—Cultivation begun—Inhabitants—Neighbouring island-groups—Fiji Islands—Area—Chief islands—Volcanic origin—Earthquakes—Fertility—Products—Trade—Capital—Natives—Population—Annexation—Tonga Islands—Productions—Natives—Capital—Cook Islands—Productions—Other British possessions—Solomon Islands—Inhabitants—Santa Cruz Islands—Union Islands—Phoenix Islands—Ellice Islands—Gilbert Islands.

### New Guinea

The great island of *New Guinea*, lying immediately to the north of Australia, is as large as the German Empire and Italy together, and about two and a half times the size of the United Kingdom. The whole western half belongs to Holland, and the eastern half consists of the Australian dependency, Papua, and the mandated territory of New Guinea. The island has not been thoroughly explored, but the Owen Stanley range of mountains in British New Guinea is known to attain a great height. The principal river in the British part is the Fly, and the seat of the administration is Port Moresby. The island is believed to have great natural wealth in forests and minerals, and a beginning has been made with the cultivation of cocoa-nuts, coffee, and other vegetable products. The inhabitants are still almost all savages, many of them of a degraded type. British New Guinea,





forming the Territory of Papua under the Commonwealth of Australia, includes numerous neighbouring islands, such as the D'Entrecasteaux and Louisiade groups.

### Fiji Islands

If we sail due east from northern Queensland, or due north from New Zealand, we shall arrive at the *Fiji Islands*, a British crown colony in the Pacific Ocean. The total area of all the islands is about equal to that of Wales, but many of them are small, and only two, Viti Levu and Vanua Levu, are of any size. Both these main islands are mountainous, and, like the rest of the group, they have been produced by volcanic outbursts in far-distant times. There are no volcanoes in the islands now, but earthquake shocks are frequent. The soil is very fertile, and the chief crops are sugar-cane and various fruits, such as bananas and pine-apples. The trade is almost entirely with Australia and New Zealand. The capital is Suva, with a fine harbour, on the south coast of Viti Levu. The native inhabitants were formerly fierce cannibals, but the Wesleyan and other missionaries have greatly improved them. The population of the islands is about 156,000, among these being coolies and others introduced to labour on the sugar and other plantations. Britain annexed the Fiji Islands in 1874.

### Tonga and Cook Islands

To the south-east of the Fiji group are the *Tonga or Friendly Islands*, over which Britain proclaimed a protectorate in 1900. Their chief productions are copra, a product of the cocoa-nut, and fruit. The native inhabi-

tants are a very fine race, and presented a marked contrast to their savage Fijian neighbours. Their capital is the town of Nukualofa. Still farther east are the *Cook* or *Hervey Islands*, which were annexed to New Zealand in 1901. Copra, coffee, and fruit are the main productions and exports.

### Other Possessions

The *Admiralty Islands* (known after 1884 as the *Bismarck Archipelago*), *Nauru* (mandated) and *Samoa*, and all the *Solomon Islands*, to the east of New Guinea, belong to Britain. The inhabitants of the *Solomon Islands* are fierce, bloodthirsty savages. Still farther east is the British group of the *Santa Cruz Islands*, and among the other British possessions in the Pacific are the *Union* or *Tokelau Islands*, the *Phoenix Islands*, the *Ellice* or *Lagoon Islands*, and the *Gilbert Islands*. The *Gilbert* and *Ellice* were proclaimed a colony in 1915.

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## 24. The Exploration of Africa

Antiquity of Egypt—Ancient knowledge of North Africa—Phœnician circumnavigation—Romans in North Africa—Vandals—Justinian—Arabs—Battle of Tours—East coast known to Arabs—Bartholomew Diaz—Vasco da Gama—Portuguese settlements—Slave-trade begun—British in Gambia—Cape Town founded—French in West Africa and Madagascar—Scramble for Africa—James Bruce—Mungo Park—Niger made fully known—David Livingstone—Ngami Lake—Zambesi River—Shiré and Nyassa—Mweru and Bangweolo—Death and burial—Speke and Burton—Speke and Grant: Victoria Nyanza—Sir Samuel Baker—Barth—Sir H. M. Stanley—The Congo—Congo Free State—Emm Pasha Expedition—Joseph Thomson.

### Earlier History

The history of Egypt takes us back several thousands of years before the Christian era, and the whole of the Mediterranean coast of Africa was well known to the Greeks and Romans, but of the western, southern, and eastern coasts little was known till the fifteenth century of our era, and of the greater portion of the interior nothing at all was known before the last half-century. Some sailors belonging to the enterprising Phœnician people, who founded the great colony of Carthage in the country now called Tunis, sailed right round Africa about six hundred years before the birth of Christ, but no records of their voyage are preserved.

All the northern coast-lands of the continent from Morocco to Egypt fell under the sway of the Roman Empire, and on the break-up of that empire in the fifth century they were conquered by a German people called Vandals, who crossed from Spain. These Vandals were in turn conquered by the armies of the great Eastern emperor Justinian in the sixth century. The Vandals and their Greek conquerors professed Christianity, but soon after the foundation of the Mohammedan religion in the seventh century the whole coast passed under the sway of invading Arabs, who introduced the new religion. These Arabs even crossed into Spain and France, and at one time threatened to conquer western Europe. This catastrophe was prevented by a great battle fought at Tours in France, but the Arabs (or Moors) were not driven from Spain till the fifteenth century.

### Portuguese Enterprise

The Arabs became well acquainted with the east coast, as far south, perhaps, as Madagascar, and they also penetrated into parts of the interior, especially in the Saharan desert. Our real knowledge of the African coasts, however, dates from the Portuguese voyages of the fifteenth century. Bartholomew Diaz doubled the Cape of Good Hope in 1486, the year after the accession of Henry VII in England, and in 1497 another Portuguese, Vasco da Gama, repeated the achievement, and sailed up part of the east coast, from which he crossed to India. Portuguese settlements were formed on both the east and west coasts, but next to nothing was done to open up the great interior. Early in the sixteenth century the Portuguese began the practice of shipping African natives to their American possessions as slaves, thus beginning the infamous slave-trade, which did not cease till last century.

### Other European Settlements

The oldest British possession on the African continent is Gambia, in West Africa, for which a company obtained a trading charter from Queen Elizabeth in 1588, but the district was not taken into actual possession for many years afterwards. The Dutch appeared on the scene in 1652, when they founded a settlement on the site of the present Cape Town, and in the same century the French laid the foundations of their future claims in West Africa and the island of Madagascar.

At the present time the whole continent, with the exception of the independent states of Egypt, Liberia, and

Abyssinia, is divided among the European powers of Britain, France, Belgium, Portugal, Spain, and Italy; but this division is of quite recent origin, having begun only about 1884. Before saying anything further about this "scramble for Africa", it is necessary to speak of the great explorers who have revealed to us the vast interior of the continent.

### Bruce and Park

James Bruce, a bold Scotchman, went up the Nile to Abyssinia in 1770, and reached the sources of the branch known as the Blue Nile. Another Scotchman, Mungo Park, began his explorations in the basin of the Niger in 1795. He reached the river from Gambia, but while descending it on his second journey he was killed by natives at Bussa, in Nigeria. His work in this region was completed by several other travellers, and by 1830 the course of this great river was almost completely known.

### David Livingstone

Greater than either of these two pioneer travellers, and greatest of all African explorers, was their fellow-countryman, David Livingstone, who went to Bechuanaland, in South Africa, as a missionary in 1841. He began his exploring work by the discovery of Lake Ngami (now dried up) in 1849, and in 1851 he struck the upper course of the great Zambesi river. He reached the river again two years later, penetrated westwards to the Atlantic Ocean, and returned eastwards to the Zambesi, which he followed to its mouth in the Indian Ocean. After a visit to England he went up the Zam-

besi from its mouth, and traced its tributary, the Shiré, to the great Lake Nyassa.

In later journeys he discovered Lakes Mweru and



Victoria Falls, on the Zambesi

Bangweolo, and explored the country about Tanganyika. He struck the Lualaba, or Upper Congo, and determined to trace its course, in the belief that it was the Upper Nile, but death overtook him in 1873 on the banks of Bangweolo lake. His native servants embalmed his

body and carried it to the coast, whence it was taken to England and buried in Westminster Abbey. Livingstone added immensely to European knowledge of the continent, and he leaves behind the memory of a singularly noble and heroic life.

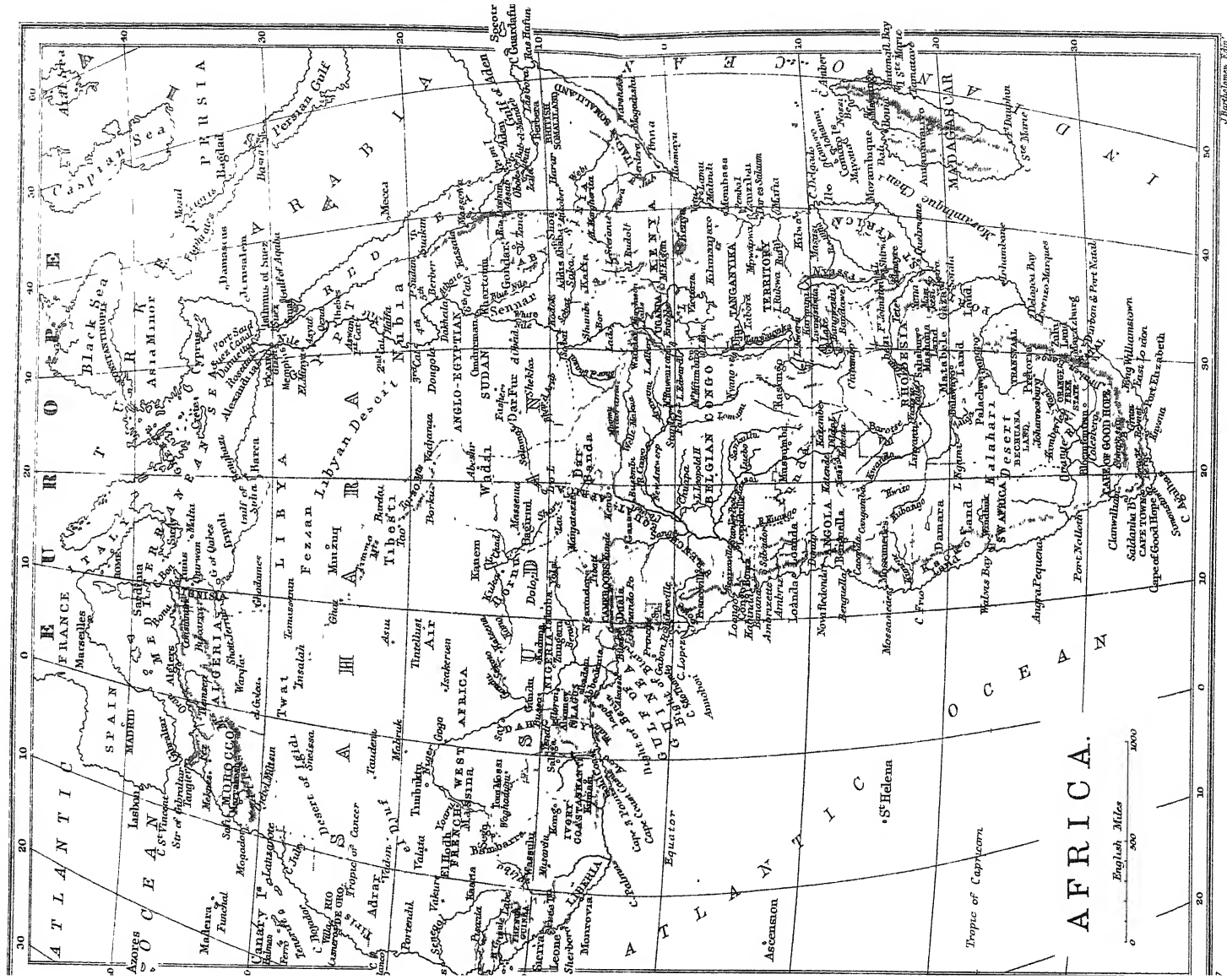
### Other Travellers

John H. Speke and Richard Burton discovered Lake Tanganyika in 1858 after a journey from Zanzibar. Speke also caught sight of the great Victoria Nyanza, which he guessed to be the source of the White Nile, and in a further journey with J. A. Grant in 1860-62 he verified his guess. Sir Samuel Baker, advancing up the Nile, met Speke and Grant on their return journey in 1863, and in the following year discovered Albert Nyanza, another great source-lake of the Nile. At the same time as Livingstone was exploring in South and Central Africa, a German traveller, Barth, partly supported by the British government, was making a splendid series of journeys in the Sahara and the Sudan. Barth's work in this district has been continued mainly by German travellers, but in the more southerly part of the continent the most noteworthy travellers are British. Two of these, Sir Henry Morton Stanley, a Welshman, and Joseph Thomson, a Scotchman, deserve special mention.

### Stanley and Thomson

Stanley first became famous in 1871 when he succeeded in finding Livingstone at Ujiji, on the shores of Lake Tanganyika. In 1874 he started from Zanzibar for Victoria Nyanza and Tanganyika, both of which





he explored with great care, and then he descended the Congo from the Lualaba to the sea. This journey revealed the magnitude of the Congo for the first time, and led to the foundation of the Congo Free State. In a later journey, undertaken in 1887 to relieve Emin Pasha, a German administrator who had been isolated in the Upper Nile valley by the Mahdist rebellion, he discovered Albert Edward Nyanza, the third of the large lakes of the Upper Nile, and the great Ruwenzori Mountains, which at the equator shoot up into the region of perpetual snow. Joseph Thomson made a daring journey in 1882 through the countries to the north and east of Victoria Nyanza. Not much of Africa now remains unvisited by Europeans, and considerable parts of it are almost as well known as our own islands.

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## 25. The Partition of Africa

Independent States in Africa—Turkish Africa—Spanish Africa—British Africa—French Africa—Portuguese Africa—Italian Africa—Belgian Congo—Its peculiar position—Charges against it—The Scramble for Territory—Native Wars—South African War—Cape to Cairo aim—Germany and the Niger—French success—France and the Nile—Portugal and the Zambesi—Groups of British possessions.

### The Political Division of Africa

With the exception of three states the whole continent of Africa is in the possession, or under the protection, of European powers. These three states are *Liberia*, in West Africa, with a total area of about 40,000 square miles, and a population of 1,500,000, a

republic founded early in last century for liberated negroes by some American philanthropists; *Abyssinia*, a vigorous kingdom in the north-east, near the Red Sea. and *Egypt*, now recognized as a sovereign state. The Turks who, at one time, owned the whole of Northern Africa from Asia to Morocco, have been expelled. *Spain* possesses, besides the Canary and other islands, a strip of the Sahara on the west coast, a few places on the coast of Morocco, and a small area on the coast of French Congo. The rest of the continent has been divided amongst Britain, France, Belgium, Portugal, and Italy.

*British Africa* has, excluding Egypt, an area of over 4,000,000 square miles, or rather more than one-third of the whole continent, and the total population of this vast territory is vaguely given at some fifty millions. The *French territories* together cover a larger area, but they are not as a whole so valuable in respect of climate and natural resources, and they carry a smaller population. In 1919 Germany was thought unfit to have control of less advanced peoples, and the territory she had seized in Africa was put under British and French control.

The African possessions of *Portugal* are more than twenty times the size of the Portuguese kingdom, and the *Italian protectorates* in the north-east are larger than the whole of Italy. The *Congo Free State*, with an area seven or eight times that of the United Kingdom, was established in 1885 by a congress of the great European Powers in order to open up the Congo basin to civilization and to suppress slavery. It was long governed by a company whose head was the King of

the Belgians, but in 1908 it was annexed by the Belgian government as a result of serious charges made against the officers of the company, and the name was changed to *Belgian Congo*.

### The Scramble for Territory

The present partition of the continent is largely the result of the keen rivalries of the Powers since the scramble for territory began in 1884. In no case did two European Powers come to war in the contest, though feeling often ran high, and there have been numerous expeditions against native tribes who laid claim to a voice in the settlement. In South Africa there was one great war of white races, that of 1899–1902 between the British and the Boer Republics, but the two races are now reconciled and working harmoniously together.

Britain penetrated into the continent from Egypt in the north, from Cape Colony in the south, and from Zanzibar in the east. She sought to secure a continuous territory from the Mediterranean to the Southern Ocean, from the Cape to Cairo, but in this she was for a time foiled by Germany, whose East African territory intervened between Uganda and Rhodesia. The German East African territory is now under the control of Britain. France penetrated inwards from the Senegal River in West Africa, from Algeria in the north, and from the coast north of the Congo mouth, and she has succeeded in linking up all these possessions into a continuous territory round the east of Lake Chad. In 1898 she tried to unite her West African colonies with her part of Somaliland on the Red Sea, but strong action by Britain prevented this and shut her out from

the Upper Nile. Portugal made an attempt to secure the basin of the Zambesi, and so to join her East and West African possessions, but Britain stepped in and secured her through route from the Cape to Tanganyika.

### British Africa

The British possessions and protectorates in Africa may be grouped in four divisions, namely: (1) the Anglo-Egyptian Sudan; (2) East African possessions; (3) South African possessions; and (4) West African possessions. The *East African possessions* consist of the four protectorates of Somaliland, Kenya Colony, Uganda, and Zanzibar and the mandated territory of Tanganyika. The *South African possessions* comprise the *Union of South Africa*, the native district of Basutoland, and the protectorates of Bechuanaland, Rhodesia, and Nyasaland. The *West African possessions* comprise the crown colonies of Gambia, Sierra Leone, Gold Coast, and Nigeria. Besides these four groups of possessions on the mainland, Britain rules several *islands* in the Indian and Atlantic Oceans, among them Socotra, Mauritius, St. Helena, and Ascension. German South-West Africa and German East Africa are now under British control, and Togoland and the Cameroons under British and French.

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## 26. Egypt and the Anglo-Egyptian Sudan: History

Ancient Egyptian Monarchy—Assyrian Conquest of Egypt—Persian Conquest—Alexander the Great—The Ptolemies—Cleopatra—Mohammedan Conquest—Coptic Christians—Ottoman Turks—Mehemet Ali—Nubia and the Sudan conquered—Ismail—"Dual Control"

begun—Tewfik—Suez Canal—Arabi's Revolt—End of "Dual Control"—Alexandria bombarded—Tel-el-Kebir—Regeneration of Egypt under British influence—Lord Cromer—The Mahdi's revolt in the Sudan—Hicks's force annihilated—Baker's defeat—Gordon and evacuation—Relief expedition—Desert column—Stewart killed—Too late—Khartum captured and Gordon killed—Sudan abandoned—Reconquest began—Kitchener and Omdurman—Death of the Khalifa—Present position of Sudan.

## Early History of Egypt

The founder of the ancient Egyptian monarchy is said to have lived about five thousand years before the birth of Christ. From his time down to the present day we have a long list of ruling dynasties, and many of the ancient kings have left splendid proofs of their magnificence and power in the great buildings which have been dug up in the valley of the Nile under the supervision of learned men. In the seventh century B.C. Egypt was conquered by a king of Assyria in western Asia, but it soon threw off the foreign yoke. In the next century, however, it was conquered by the Persians, who had become the leading power in the west of Asia, and when Alexander the Great destroyed the Persian empire he added Egypt to his dominions in 332 B.C.

On Alexander's death his empire was divided, and Egypt passed to a ruler called Ptolemy, who was a patron of learning, and made the city of Alexandria the chief centre of culture. Ptolemy was succeeded by a line of monarchs of the same name; but the dynasty ended with a woman, the famous Cleopatra, who committed suicide when her country was conquered by the Romans in 30 B.C. Egypt then became a part of the Roman Empire.

### Mohammedan Conquest

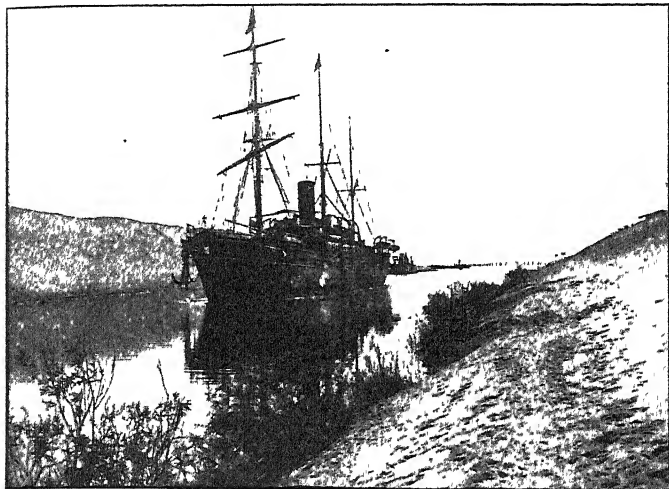
The Mohammedan Arabs, soon after the foundation of their religion in the seventh century, conquered the country. The Coptic Christians, who differed on some points of doctrine from the other Christians, came to terms with them, and their church has thus been able to maintain its existence to the present day; but the Christians who adhered to the faith of the Constantinople church were massacred, expelled, or forcibly converted to Mohammedanism. Early in the sixteenth century the country became subject to the Ottoman Turks, who had gained a footing in Europe two centuries before, and not till the close of the World War was Turkish suzerainty cast off.

### Britain in Egypt

During the first half of the nineteenth century Egypt was governed by Mehemet Ali, a very able and energetic ruler, who conquered parts of Arabia and Syria and tried to throw off the Turkish yoke. He advanced the frontier of Egypt well to the south, so as to include Nubia and the Sudan in his dominions. One of his successors, Ismail, got his country deeply involved in debt, thus compelling Britain and France to interfere to secure their interests as money-lenders, and in 1879 the Turkish sultan was induced to replace Ismail by his son Tewfik. Ismail's reign is notable for the opening, in 1869, of the Suez Canal, which made Africa an island.

Many of the Egyptian people were displeased with the European meddling in their affairs, and in 1882 a revolt against the Khedive's authority broke out under the leadership of Arabi Pasha. Britain determined to

suppress the revolt and maintain the Khedive's position, but France declined to co-operate in this action. Thus the "dual control" of Egypt by Britain and France ended, and Britain became supreme in Egyptian affairs. Alexandria was bombarded by British warships, and



An Ocean Liner in the Suez Canal

Arabi's forces were totally defeated at Tel-el-Kebir by an army under Sir Garnet (later Viscount) Wolseley.

To maintain the power of the Khedive it was necessary at the time to keep a British army in the country, but the British authorities intended to withdraw this army at the earliest convenient moment. They started to reform the finance, to remodel the native army, to improve agriculture, to purify the administration of justice, and generally to promote the civilization of the



country, and this has gone so far that Britain has now been able to withdraw. The great agent in this beneficent work was Sir Evelyn Baring, later Lord Cromer.

### The Mahdist Rebellion

While Arabi was in revolt, a more serious rebellion broke out in the Sudan. Egyptian rule there had not been satisfactory, and the subject peoples, therefore, flocked readily to the standard of Mohammed Ahmed, who called himself a Mahdi or prophet. The Mahdi was very successful, and the British authorities advised the Egyptians to abandon the Sudan for the time, but the latter were anxious to regain it. An Egyptian force under a British general named Hicks was annihilated at El Obeid, in Kordofan, in 1883, and General Baker in command of another Egyptian force was severely defeated in 1884 near Suakim, on the Red Sea.

Evacuation was determined upon, and General Charles Gordon, who had ably ruled the Sudan some years before, went out to assist in it. He took up his position in Khartum, at the junction of the Blue and White Niles, but the forces of the Mahdi gradually hemmed him in. A relief expedition was determined upon, and Sir Garnet Wolseley was put in command. The long route up the Nile was chosen instead of the shorter one across the desert from Suakim to Berber, and this partly accounts for Wolseley's failure to reach Khartum in time. A column under Sir Herbert Stewart and Sir Charles Wilson was detached at Korti, where the Nile makes a great bend, and sent straight across the desert to Mettemeh, farther up the river. After heavy fighting,

during which Stewart was killed, Metemmeh was reached, but Wilson soon found that he had arrived too late to save Gordon. The Mahdists had taken Khartum and killed Gordon on January 26, 1885.

The Sudan was abandoned to the rebels till 1896, when an Anglo-Egyptian expedition under the command of Sir Herbert (later Viscount) Kitchener advanced up the Nile to recover it. Several victories on the way were crowned by the decisive victory of Omdurman, opposite Khartum, which was fought in 1898. The forces of the Khalifa, the Mahdi's successor, were completely routed, and the Khalifa was killed in a later battle. Egypt, a British protectorate from 1883, was in 1922 recognized as an independent sovereign state.

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## 27. Egypt and the Anglo-Egyptian Sudan: Geography

The four great rivers of Africa—Nile the longest—Source of the Nile—Tributaries and course—The Delta—Nature of basin below Khartum—The deserts—Eastern mountains—Rains in upper basin—Annual rise—Method of irrigation—Assuan dam—Parts of Egypt—Population—Climate—Chief crops—Fruits and vegetables—Sudan products—Minerals and manufactures—Ports—Exports and imports—Cata-racts of the Nile—Railways—Cairo and Khartum.

### The Nile

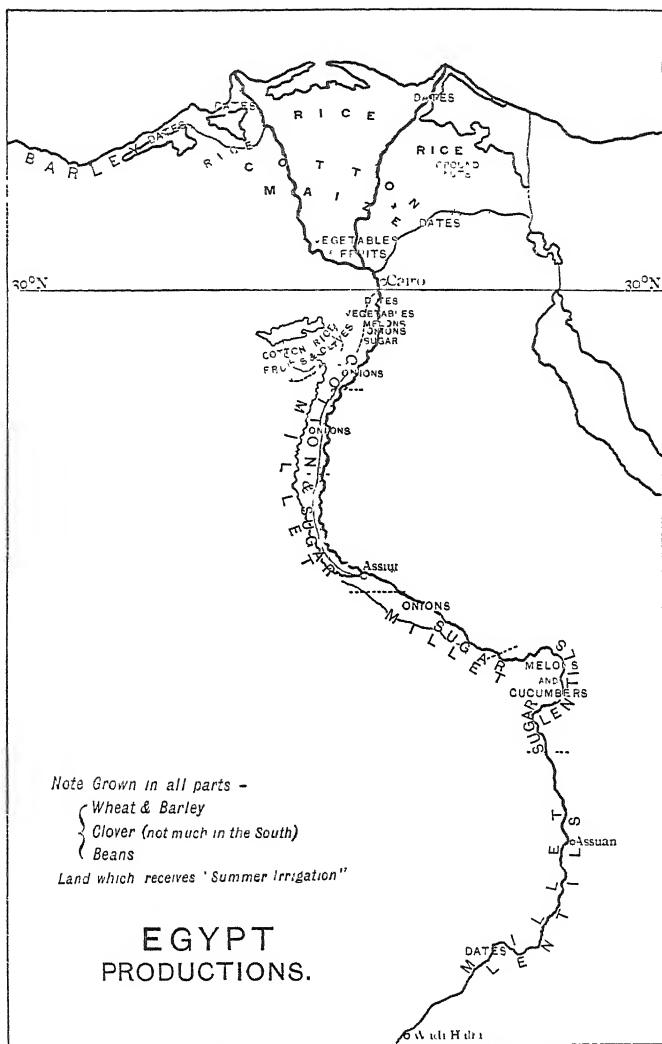
Africa has four great rivers, the Nile, the Congo, the Niger, and the Zambesi. The longest of these is the *Nile*, which is specially associated with Egypt and the Anglo-Egyptian Sudan. Its total length from source to sea is about 3700 miles, about thirty-seven times the



length of the Clyde, and greater than the length of any other river, except the Mississippi as measured from the source of the Missouri.

The Nile rises in Tanganyika Territory, where its head-streams flow into the great lake Victoria. It leaves the lake in the Uganda Protectorate under the name of the Victoria Nile and enters Albert Nyanza. From this lake it emerges under the name of Bahr-el-Jebel, and a little above Fashoda it is joined by the Bahr-el-Ghazal from the west and the Sobat from the east. It then takes the name Bahr-el-Abiad or White Nile, which it keeps to Khartum, where it receives the Bahr-el-Azrek or Blue Nile from the mountains of Abyssinia. It now becomes known simply as the Nile, and a little above Berber it receives its last tributary, the Atbara, also from the Abyssinian mountains. From Berber to Wadi Halfa it bends in the form of a great S, but thereafter it keeps a generally northerly course to Cairo, where it branches to form the Delta. The Delta has two main arms, which are known from the ports near their mouths as the Rosetta and Damietta branches.

Below Khartum the Nile flows through a rainless, desert region, where the fertile land is confined to a strip on both banks of the river. It occupies a rent in the desert, bounded by low heights, which in some places come close to the banks and in others recede for several miles. About Cairo the heights divide more widely, and thus the river forms the large triangle of fertile land known as the Delta. The part of the Sahara to the west of the lower Nile is called the Libyan Desert, and includes some important oases. To the east of the river there is the Arabian Desert, which is known farther



south as the Nubian Desert. The Arabian Desert is separated from the Red Sea by mountain chains, which rise to over 6000 feet, and in the Sinai peninsula, between the Gulfs of Suez and Akaba, there are hills over 8000 feet high.

### Nile Irrigation

The Nile valley from Khartum to Fashoda has a small annual rainfall, but farther south the rainfall is of tropical abundance. In these upper parts, too, there are desert tracts and chains of hills, the highest peaks being in the western region known as Darfur. The heavy summer rains of Abyssinia are brought down by the Blue Nile and the Atbara to the main Nile, which rises steadily for several months, until it is more than twenty feet above its previous level. Its banks are protected by dikes, so that this rise does not cause flooding; but the water is led off by canals into fields near the banks, where it lays down the fine mud brought from the mountains. This produces a very fertile soil, which yields abundant crops of various cereals and other plants. Agriculture in Egypt depends entirely on the annual rise of the Nile. Several great works have been constructed to regulate the supply of Nile water to the fields and prevent waste, the greatest being the dam at Assuan. The Gezirah project with its dam at Makwar is more recent.

### The Sudan

The *Anglo-Egyptian Sudan* extends north from the Uganda Protectorate to Wadi Halfa, and north of Wadi Halfa the Nile is wholly in Egypt proper. Egypt proper consists of two main divisions, namely, *Upper*



The climate is extremely hot. The annual variation of temperature is greater in the deserts than near the river, and it is often very cold there. The deserts are, however, healthier than the Nile valley.

Cotton is the chief crop of Egypt, and is grown principally in the Delta. It is also of great importance in



A Cataract on the Nile

the Sudan and in Upper Egypt. Wheat and barley are cultivated, but of much greater importance are maize and millets, the former in Lower Egypt and the latter in Upper Egypt. Sugar is an important crop in the upper division, and rice is grown in the northern part of the Delta. The date is the chief fruit, but oranges, grapes, figs, and melons flourish well in parts. Onions and lentils are the chief vegetable crops. In the Sudan the



principal crop at present is a kind of millet. Egypt proper has few trees and no forests, but in the Sudan, to the west of the Nile, there are dense forests, which yield abundance of gum, rubber, ebony, and other valuable substances. Egypt is poor in minerals, and its manufactures are not yet of much account.

The principal seaport of Egypt is Alexandria, situated west of the Delta, and next to it in importance are Port Said and Suez, at the two ends of the Suez Canal. Damietta and Rosetta, on the two Nile mouths, also do some trade. The exports are chiefly raw cotton, sugar, beans, onions, rice, and gum, and the imports comprise manufactured goods, metals, and minerals. The Nile is a splendid navigable waterway, but its navigation is obstructed by six cataracts, or rather rapids, between Khartum and Assuan. Besides several lines of railway in the Delta, a line runs from Cairo up the Nile valley to Khartum, and there is a line from Berber to Suakin and Port Sudan on the Red Sea. Cairo is the capital of Egypt, and the largest city of Africa; Khartum is the capital of the Sudan.

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## 28. British West Africa

The Guinea Coast—Gulf of Guinea—Old names of parts of the coast—Slave-trade—Territories of the Guinea Coast enumerated—River Niger—Its tributaries—Other British rivers—Lagoons—Lake Chad—Climate—Natives—Christian missions—Few white men—Exports and products—Forests and minerals—Gambia—Bathurst—Sierra Leone—Freetown—French and others on the Gold Coast—Danes and Dutch bought out—Ashanti campaign—Annexation of Ashantiland—Accra and Kumasi—British in Lagos—Nigeria—Royal Niger Company—Company bought out—Capitals.

## The Guinea Coast

The coast of western Africa from the mouth of the river Senegal to the mouth of the Niger has long been known as the Guinea coast, and the Portuguese, who first explored it, formerly applied this name to the country as far south as the Orange river. The great bend in the coast at the Niger mouth is known as the Gulf of Guinea, and the two main parts of this gulf are called the Bights of Benin and Biafra. Different parts of this coast are known as the Pepper Coast, Ivory Coast, Gold Coast, and Slave Coast. These names commemorate former articles of merchandise, but the only one now appropriate is Gold Coast. The slave-trade was formerly the chief industry throughout the whole of this region.

Beginning at the Senegal river, the coast is occupied in succession by the following colonies or territories:—*Senegal*, belonging to France; *Gambia*, a British crown colony and protectorate; another part of Senegal; *Portuguese Guinea*; *French Guinea*; *Sierra Leone*, a British crown colony and protectorate; *Liberia*, a negro republic; the *Ivory Coast*, belonging to France; the *Gold Coast*, a British crown colony, to which is attached a large protectorate, including Ashantiland; *Togoland*, mandated to France and Great Britain; *Dahomey*, belonging to France; and *Nigeria*, a British colony and protectorate which includes the former colonies of *Northern Nigeria*, *Southern Nigeria*, and *Lagos*, and which has an area of 340,000 square miles and a population of sixteen and a half million. Nigeria is surrounded on three sides by French territory.

### Rivers and Lakes

There are no mountains of any importance in this part of Africa, but there are numerous rivers, including the *Niger*, one of the great waterways of the continent. It rises on the north slopes of hills to the north of Sierra Leone and Liberia, and flows north-east for a long distance, but somewhat below Timbuctoo it turns to the south-east, and it finally enters the Gulf of Guinea by a delta of many mouths. The whole of its north-easterly and about half of its south-easterly course are in the French sphere, but the rest of the river, including the delta, belongs to the British district of Nigeria. Two of its largest and most important tributaries, the Sokoto and the Benue, are also included in Nigeria. It is about 2600 miles in length.

Among the many shorter rivers, the longest of those which more or less belong to Britain are the Gambia, in the colony of Gambia; the Scarcies and the Rokelle, in Sierra Leone; the Volta, in the Gold Coast colony; the Benin and old Calabar, in southern Nigeria. A considerable part of the coast is bordered by lagoons, that is, shallow salt-water lakes directly communicating with the sea. There are no inland lakes of any size except Lake Chad, which is divided between France and Britain. Lake Chad is a shallow depression fed by the Shari and other streams, but without any outlet to the sea.

### Climate, People, and Products

The climate of the West African coast is hot and damp. It is very unhealthy for Europeans, but some of

the higher lands of the interior are said to be suitable for the settlement of white men. The natives are negroes of many different tribes. Many of them profess Mohammedanism or Christianity, but some are pagans. There are numerous Christian missions along the coast,



Ashanti: Typical Up-country Village

and education is at present mostly carried on in their schools. The number of white men is very small.

Palm-oil, palm kernels, cocoa, and gum are the chief exports of Nigeria, the Gold Coast, and Sierra Leone, and ground-nuts are the principal article exported from Gambia. Rubber, wax, timber, kola-nuts, and ivory are other valuable products; and among crops cultivated by the natives for their own use are rice, maize, and ginger. The natural wealth of these colonies consists largely in

their forests, and none of them yields minerals to any extent, except the Gold Coast, which exports a fair amount of gold, and Nigeria, which produces coal and tin.

### Gambia and Sierra Leone

*Gambia* is the oldest British possession in the African continent. It consists principally of a narrow strip of country along both banks of the river Gambia, but its capital, Bathurst, is on an island at the mouth. *Sierra Leone*, after being for long a centre of the slave-trade, was acquired by some British philanthropists in 1788 to serve as a settlement for freed slaves. Its capital, Free-town, is a coaling station, and the chief port on the Guinea coast.

### Gold Coast

The French had settlements on the *Gold Coast* in the fourteenth and fifteenth centuries, and they were followed by several other European countries looking for profitable trade. Britain ultimately became the chief trader. In 1850 the Danes were bought out, and in 1871 the Dutch forts were purchased. British influence in the interior began with the Ashanti war of 1874, in which Lord Wolseley had the command, and more recent expeditions have led to the annexation of the country. The capital of the Gold Coast colony is Accra, and Kumasi was the chief town of the former Ashanti kingdom.

### Lagos and Nigeria

British interference in *Lagos* began in 1851 with an attempt to put down the slave-trade, and the country came into British possession ten years later. *Nigeria*



was secured for the British Empire mainly by the exertions of Sir George Taubman-Goldie and the Royal Niger Company, which received its charter in 1886. In 1900 the company's rights were bought out by the British government, which now administers the country directly. In 1906 Lagos and Southern Nigeria were united, and in January, 1914, both were joined with Northern Nigeria to form the "Colony and Protectorate of Nigeria".

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## 29. British East Africa

British protectorates in East Africa—The great lakes—The western rift-valley—Equatorial forest—Ruwenzori mountains—The eastern rift-valley—Victoria Nyanza—Mount Elgon—Kenya and Kilimanjaro—Rivers Juba and Tana—Somahland—Zanzibar and Pemba—Socotra—Natives of East Africa—Products of British East Africa—Mombasa-Kisumu Railway—Towns and ports—The Sultan of Zanzibar and his possessions—Britain and Germany—The proclamation of the Zanzibar protectorate—The British East Africa Company—Annexation of Socotra.

### British Possessions in East Africa

The British possessions in eastern Africa are: *Somali-land*, a tract of country along the coast of the Gulf of Aden; *Kenya*, extending from the coast right inland to Victoria Nyanza; the *Zanzibar Protectorate*, comprising the islands of Zanzibar and Pemba, off the east coast; *Tanganyika Territory*, formerly German East Africa, south of Kenya; and *Uganda*, an inland protectorate in the lake region where the Nile takes its rise. To these we may add the island of *Socotra*, which lies off Cape Guardafui.

### The Rift-Valleys and their Lakes

The chief feature of Egypt and the chief of West Africa were great rivers, but in eastern Africa the great lakes are the most striking element in the physical geography. Lakes Albert and Albert Edward lie in a great rift or furrow which extends far to the south and north. Lake Tanganyika, on the frontier of Tanganyika Territory and the Belgian Congo, also belongs to this rift-valley. The Semliki river flows north out of Edward Nyanza (Nyanza means lake) and into Albert Nyanza, which it leaves again as the Bahr-el-Jebel or Upper Nile. Between the two lakes there is a part of the great equatorial forest in which Stanley found a race of pigmies. Here, too, is the great Ruwenzori group of mountains, situated almost on the equator, and rising to a height of about 16,700 feet above the level of the sea.

Farther east there is another rift-valley occupied by a series of lakes. The largest and most northerly of these in British territory is Rudolf, and south of it there come in order the smaller lakes Sugota, Baringo, Nakuro, and Naivasha. The rift is continued southwards in Tanganyika Territory, and contains Lake Nyasa on the eastern frontier of the Nyasaland Protectorate. The main feature of the plateau between these two rift-valleys is the great Lake Victoria, the chief source-lake of the Nile. It is the second largest lake in the world, being nearly as large as Ireland. It receives the waters of the Kagera and other streams, and discharges by the Somerset or Victoria Nile, which, after forming the Ripon and Murchison Falls, flows into the north end of Albert Nyanza





and merges its waters in those of the Albertine Nile. The only notable mountain on this plateau is the isolated volcanic peak of Mount Elgon, which attains a height of more than 14,000 feet.

### The Eastern Possessions

Passing to the east of the eastern rift-valley we first reach a mountainous region, in which the most striking heights are the isolated volcanic summits of Kenya and Kilimanjaro. Kenya is 17,000 feet high, and Kilimanjaro, in Tanganyika Territory, 19,000 feet high. On leaving the grassy uplands of this region we reach a rather arid, barren district, and near the coast the plateau breaks down to the lower coast strip on the Indian Ocean.

The chief rivers flowing to the Indian Ocean here are the Juba, which crosses Italian Somaliland from Abyssinia, and the Tana in Kenya. The interior of Somaliland is mostly a rather barren, sandy desert, but on the escarpment at the edge of the plateau, and in the coastal strip between this and the sea, the soil is more fertile. The islands of Zanzibar and Pemba are mainly of coralline formation, and are traversed by low ranges of hills. Socotra is a rough, stony island rising to a height rather greater than that of Ben Nevis.

### The Native Inhabitants

The native inhabitants of this part of Africa are of many different races, but they may be classed in a few main groups. There are pigmies in the western parts; true negroes in the Nile valley; Hamitic peoples, allied to the Berbers of the Sahara and the Egyptians, found

in Somaliland and to the east of Lake Victoria; Arabs, in Zanzibar principally, and various Bantu races, such as the people of Uganda. The natives of Uganda are a very skilful and intelligent race, but there are also numerous races of a very degraded type.

### Products and Ports

The principal products of British East Africa are ivory, rubber, cattle, timber, guns, and cloves, the last being the principal crop in the islands of Zanzibar and Pemba. Hitherto no important discoveries of minerals have been made. There is a railway from the coast at Mombasa to Kisumu on Lake Victoria. On the railway is Nairobi, the capital of the colony, a growing place with a population of 25,000 of which 3000 are Europeans. Mombasa is the chief port. Entebbe, on Lake Victoria, is the British head-quarters in the Uganda Protectorate, but the king of Uganda has his residence in Mengo. Berbera is the chief town of British Somaliland, and other ports on this coast are Bulhar and Zeila. The port of Zanzibar, on the island of that name, has a large trade.

### British Sphere

Formerly the whole of the east coast of the continent from Somaliland to Mozambique belonged to the Sultan of Zanzibar, but in 1884 Germany obtained part of his mainland possessions. Britain then stepped in, and in a very short time the Sultan was deprived of all his territory except the two islands of Zanzibar and Pemba. In 1890 Britain proclaimed a protectorate over these islands. Kenya Colony, as British East Africa, was ruled for a

time by a chartered company. It was not till 1920 that the administration was taken over by the Colonial Office. Socotra was annexed by Britain in 1886.

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## 30. British South Africa: History—I

### To the Great Trek

British Possessions in South Africa—Bushmen—Hottentots—Zulus—Chaka—Mosilikatse—Matabeles and Mashonas—Portuguese as pioneers—Dutch found Cape Town—Huguenots absorbed—British take Cape Town—Cape Town restored—Again taken and purchased—British colonists arrive—Emancipation of slaves—Dutch grievances—The Great Trek.

### British South Africa

The British dominion in southern Africa now extends continuously from the south end of Lake Tanganyika to the extremity of the continent. It occupies an area of about 1,500,000 square miles, which is nearly equal to that of Europe outside of Russia. This extensive region is not, however, under a single administration, but consists of several distinct states and protectorates. Cape Colony, Natal, the Transvaal, and the Orange Free State now form a single state; Basutoland is a native state directly ruled by the imperial government; and north of these are Rhodesia, formerly under the British South African Co., and the Nyasaland Protectorate, formerly known as the British Central Africa Protectorate. The Bechuanaland Protectorate extends west of the Transvaal, and South-West Africa to the Atlantic.

## Native Races

The original inhabitants of much of this country were the *Bushmen*, now represented by a small and dying remnant in the Kalahari desert. They were a very rude people, who lived mainly by hunting, and were displaced by the *Hottentots*, a superior pastoral race, who have in



Kaffir Knaal, South Africa

turn given way to the Bantu races known as *Kaffirs*. The most famous of these Kaffir races are the *Zulus*, whose wars and migrations caused great changes in South Africa in the early part of last century. Under a skilful chief Chaka they penetrated from Zululand into Natal and exterminated the native peoples there, and a section of them pressed beyond the Zambesi into Nyasaland.

Another branch, under a chief called Mosilikatse, occupied the Transvaal in the thirties of last century, but they were driven north by Boers across the Limpopo into the present Southern Rhodesia, where they formed the *Matabele* nation. They grievously oppressed the peaceful *Mashona* people whom they found in occupation there, and their misdeeds were not checked till the arrival of the British in the nineties. The *Basuto* nation was built up by an able chief called Moshesh out of several Kaffir peoples who retired before the Zulus into the mountains, where they were able to hold their own.

### Portuguese and Dutch

The Portuguese were the first European people to visit the coasts of South Africa, but the first settlement was made by a party of Dutchmen under Van Riebeeck in 1652. The settlement was made on the site of the present Cape Town, and the little colony spread eastwards and northwards at a very slow rate. The colonists at first confined themselves to supplying fresh vegetables and other articles of food to ships of the Dutch East India Company on their way to and from Batavia, but they soon introduced the vine, planted trees, and in other ways laid the foundation of the South Africa of to-day. A band of Huguenots who left France because their king had deprived them of religious liberty arrived in the colony in 1689. They soon lost their language and were absorbed by the Dutch element, but their names have been, and are still, borne by some of the leading men of the Boer nation.

### Britain and the Cape

British intervention in South Africa began in 1795. In that year Britain and France were at war, and the latter power had overrun the Dutch territory in Europe. The British government desired the Cape as a half-way house to India and accordingly an expedition was sent against Cape Town, which surrendered after a slight resistance. The British withdrew on the conclusion of peace in 1802, but war soon again broke out, and in 1806 the Cape was reconquered. At the peace of 1814 the Dutch government in Europe sold the Cape and the present territory of British Guiana in South America for a considerable sum. Ever since that date Cape Colony has remained British.

The first large party of British colonists arrived in 1820 and settled in the east of the colony. In 1833 the imperial parliament passed the great act setting free all slaves in British colonial possessions and granting compensation to their owners. The South African colonists held many slaves, who were, of course, emancipated by this act. The Dutch were not opposed to emancipation, and had even tried to carry out a gradual abolition of slavery in the colony; but the imperial act was put into force in an unjust and inconsiderate manner in South Africa, and many of the colonists suffered heavily. This was a cause of the Great Trek or emigration of many Dutchmen into the unexplored north, which began about 1836. The Dutch had other grievances, such as the attempt to suppress their language, the attempt to exclude them from a proper share in their own government, and the unwise conduct of the home government

in regard to a Kaffir war in 1835. The trekkers, indeed, were largely colonists who had held few or no slaves, but keenly felt the slight to their people, and determined to leave British territory. This Great Trek is an extremely important event in South African history.

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## 31. British South Africa: History—II

### From the Great Trek to the First Boer War

Boers in Natal—Dingaan's massacre—The Boer victory—Natalia—British annexation of Natal—Orange River Sovereignty—Boomplatz—Basuto War—Sand River Convention—Orange Free State—Transportation agitation—Sir George Grey—Parliamentary government in Cape Colony—Grey attempts federation—Kimberley and diamonds—Annexation of Transvaal—Zulu War—Sekukuni defeated—Boer revolt—Joubert and Colley—Majuba—Transvaal republic restored—London Convention—President Kruger.

### The Boer Republics formed

The trekkers crossed the Orange river into the country now known as the Orange Free State, and some of them penetrated eastwards into the present Natal. Chaka's brother Dingaan was the Zulu chief at this time, and the wandering Boers under Piet Retief endeavoured to come to terms with him. He made an agreement with them, but Retief and many other Boers were entrapped and killed soon afterwards. The Boers then resolved to punish him, and in December, 1838, a small party of them utterly routed the Zulus. The anniversary of this great victory is still observed by the Boers as a national holiday under the name Dingaan's Day.



The victorious Dutchmen placed Dingaan's brother Panda over the Zulus, and proceeded to establish a republic called Natalia. The British, however, had already settled at Durban, and after some hesitation the British government annexed the country in 1843. Most of the Dutch then left it and recrossed the Drakensberg into the Orange colony to found a new republic. Here again they came into conflict with the British. The country was annexed in 1848 under the name of the Orange River Sovereignty, and when the Boers took up arms to assert their independence they were defeated by Sir Harry Smith at Boomplatz.

Not long after this victory the British and the Basutos were at war, and the difficulties of the British in the war led them to reconsider their claim to sovereignty over the trekking Boers wherever they might go. The independence of those north of the Vaal was recognized by the *Sand River Convention* of 1852, and thus the Transvaal republic came into existence. Two years later the Boers between the Orange and the Vaal were recognized as forming an independent republic under the name of the *Orange Free State*.

### Cape Colony and the Free State

An attempt to make South Africa a penal station was defeated by the determined opposition of the colonists during the period 1848-53. Soon after the creation of the Orange Free State Sir George Grey came from New Zealand to assume the duties of governor of Cape Colony, which received parliamentary government in 1854. Grey's rule did much to bring all the races together, and he even took steps to form a South African

federation, but was prevented by the home government from carrying it through.

In 1869 diamonds were discovered in the neighbourhood of Kimberley, in the western part of the Free State territory. The British government claimed the district, and for a time feeling ran high, but the matter was ultimately settled by arbitration, Britain obtaining the disputed tract and the Free State receiving a sum of money by way of compensation.

### Boer and Zulu Wars

The most critical period in the history of South Africa begins in 1877. In that year certain events led to the annexation of the Transvaal by the British government, and for some time it remained under British rule. The republic was in financial difficulties, and was threatened by the Zulus and other native tribes. In 1879 the Zulu power under Cetewayo was overthrown, and Sekukuni, a Kaffir chief in the north-east of the Transvaal, was defeated about the same time. Thereafter the Boers, being discontented under British rule, revolted in December, 1880. The British garrisons in the country were besieged, and a force under General Joubert marched to the Natal frontier. Joubert met General Sir George Colley at Laing's Nek with a small force from Natal, and defeated him early in 1881. Colley suffered another reverse almost immediately afterwards at Ingogo, and on Majuba Hill he and many of his men fell before the Boer attack.

Before the fight at Majuba the Boers had asked the British government to send men to enquire into the state of the country. The British government accepted the

proposal, but before the Boer reply could be received Colley occupied Majuba Hill and suffered the unfortunate reverse. The government proceeded with the policy adopted before the battle, and restored the Transvaal republic by the *Pretoria Convention* of 1881. Under this convention the Transvaal Boers were granted a limited independence subject to British suzerainty; but in 1884 a fresh convention granted them complete independence in internal affairs, though the British government reserved a right to veto treaties with foreign powers. The second or *London Convention* recognized the state under the name South African Republic. The first president of the restored republic was Stephen John Paul Kruger, who had taken part as a boy in the Great Trek, and he held this office till the second annexation of the state in 1900.

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## 32. British South Africa: History—III

### From War to Reconciliation

Zulu War—Annexation of Zululand—Incorporation in Natal—Responsible government in Natal—Annexation of Pondoland—Gold in the Transvaal—Witwatersrand—The Outlanders—Boer alarm and policy—Outbreak of the great war—The treaty of surrender—Self-government—Union of South Africa—British South Africa Company chartered—Matabele wars—Cecil Rhodes—Nyasaland Protectorate.

### The Zulus and Natal

The Zulu war of 1879 has been already referred to. It began disastrously for the British, who were heavily defeated at Isandlwana, but Lord Chelmsford gained a

decisive victory at Ulundi before Sir Garnet Wolseley could arrive to take over the command. An attempt was afterwards made to restore Cetewayo as a sort of vassal-king, but he was eventually driven out, and in 1887 Zululand was annexed. Since 1897 it has been included in Natal. Natal was not granted full responsible government till 1893, twenty-one years after Cape Colony. The eastern frontier of Cape Colony was advanced at various dates after wars with Kaffirs, but it did not reach the Natal border till 1894, when Pondoland was annexed.

### Boer and Outlander

Gold had been discovered in parts of the Transvaal in the seventies, but the gold-fields of the Witwatersrand, of which Johannesburg is now the centre, were not known till about 1886. British, American, and other people flocked to the country in search of riches, and in a few years the alien or Outlander population was greater than the native Boer population. The Boer government and people became alarmed lest the new-comers should make themselves masters of the country, and in the vain effort to prevent this they made it difficult for foreigners to obtain full citizen rights.

### The Boer War

The relations between the Boers and the Outlanders became more and more strained as time passed, and eventually war broke out on October 11, 1899. The Orange Free State joined the Transvaal, and after more than two and a half years of warfare a treaty of peace was signed on May 31, 1902. Under this treaty the two

republics became parts of the British empire. In 1909 the four chief British colonies were united under one government, and, in 1914, they joined the rest of the Empire in the war against German aggression. They drove the Germans out of South-West Africa, and took an important part in the conquest of German East Africa.

### Rhodesia

The British South Africa Company, which ruled Rhodesia north of the Transvaal till 1923, received its charter in 1889. It waged several wars against the Matabeles, whose raiding is now effectually restrained. Rhodesia is named from Mr. Cecil Rhodes, a former statesman in South Africa. The Nyasaland Protectorate, west and south of Lake Nyasa, was formed in 1891.

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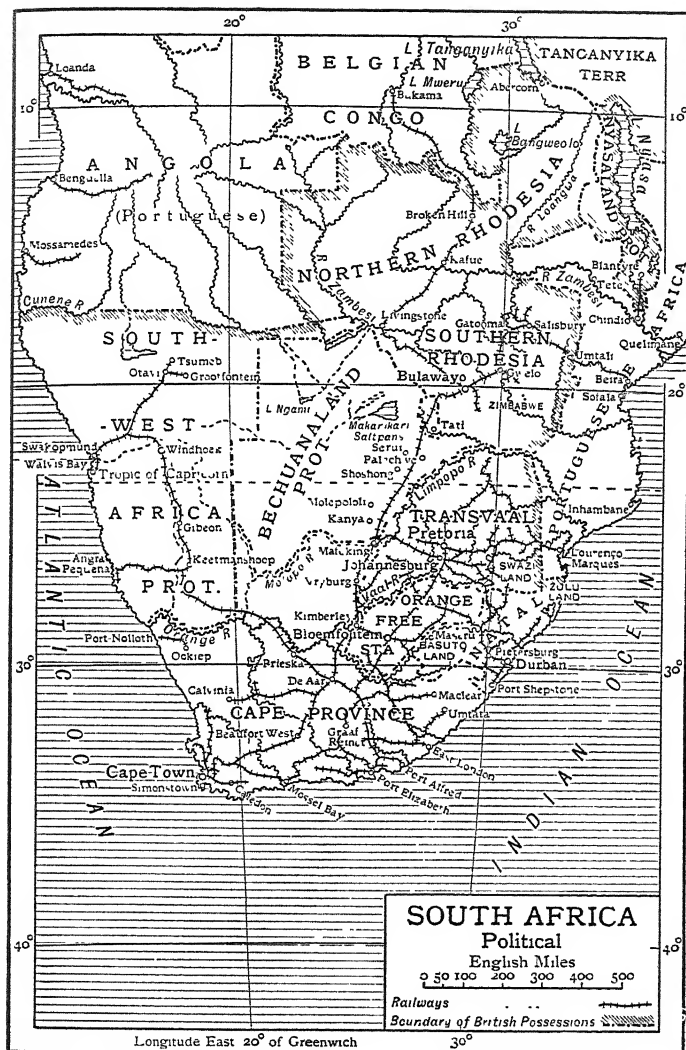
## 33. British South Africa: Geography—I

### Mountains, Rivers, Lakes, Towns

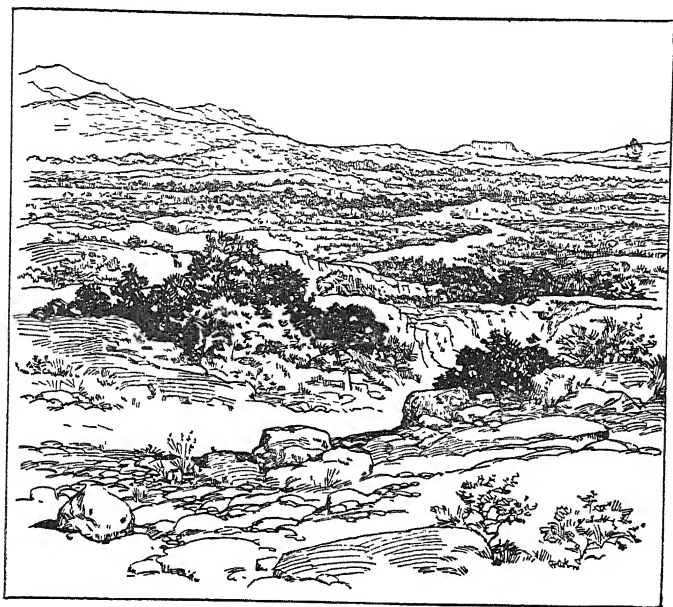
Terrace formation—Coastal strip—Lange Bergen—Little Karroo—Zwarte Bergen—Great Karroo—Drakensberg and other ranges—Inland plateau—The Northern Transvaal—The Karroos in the dry and the wet season—Character of South African rivers—Orange river—Limpopo—Zambesi—The chief lakes—Chief towns and capitals.

### Mountains and Plateaus

A traveller proceeding northwards from the south coast of Cape Colony into the interior has to ascend a series of terraces or steps. First, there is the *coastal strip* bounded on the north by a line of low ranges known under various



names in different parts, among them Lange Bergen. On surmounting these hills he finds himself on the plateau known as the *Little Karroo*. This plateau is terminated on the north by the *Zwarte Bergen* and other mountain



A Karroo Landscape

ranges, which form the southern face of the higher and broader plateau called the Great Karroo.

The *Great Karroo* is 2500 or 3000 feet above the level of the sea, and is skirted on the north by the chief mountain ranges of South Africa. The most important of these ranges are, in order from west to east, Roggeveld, Nieuwveld, Sneeuwberg, Stormberg, and the Drakens-

berg or Quathlamba Mountains. The Drakensberg is the highest range of South Africa, and extends beyond Cape Colony along the boundary of Natal and the Orange Free State into the Transvaal. The highest summit of the Drakensberg is over 11,000 feet above sea-level.

This line of high ranges forms the southern escarpment of an extensive plateau about 4500 feet above the level of the sea, and extending inland over the Orange Free State and the southern Transvaal. The northern part of the Transvaal is lower, and in consequence much less suited for settlement, than the southern part. During the dry summer the Karroos and northern plateau have a barren appearance, but when the rain falls they become verdant and beautiful with herbage and flowers.

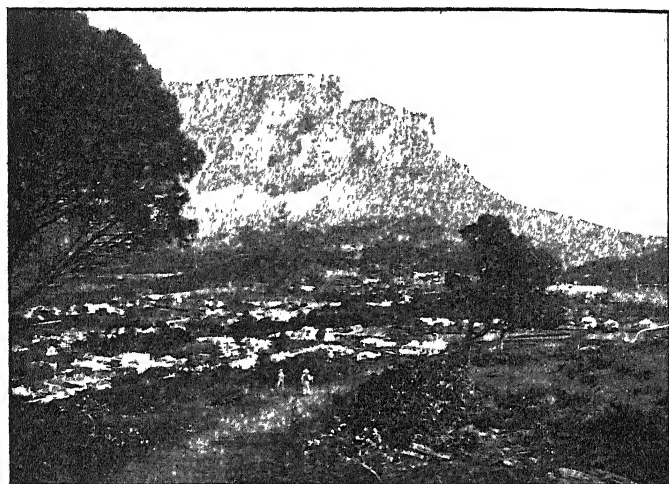
### Rivers and Lakes

The rivers of South Africa are nearly all useless for navigation. Many of them become mere chains of pools in the dry season, whilst during the rainy season they are raging torrents. Even when perennial, their courses are usually interrupted by falls or rapids at the places where they descend from one terrace to the next. The most notable river of Cape Colony is the Orange, which flows westwards to the Atlantic Ocean, and separates Cape Colony from the Orange Free State and from South-West Africa. It receives numerous tributaries, the most important being the Vaal, which forms the boundary between the Orange Free State and the Transvaal.

The Limpopo is a long river which flows along the northern boundary of the Transvaal into Portuguese



East Africa, and so to the Indian Ocean. Larger than either of these is the Zambesi, which flows eastwards through Rhodesia into Portuguese East Africa, and enters the Indian Ocean by several mouths. It has a



Cape Town and Table Mountain

total length of about 1700 miles. Among its numerous affluents is the Shiré, which carries to it the waters of Lake Nyasa.

The only large lakes in British South Africa are found to the north of the Zambesi, in Northern Rhodesia and the Nyasaland Protectorate. Lake Nyasa has an area of about 10,000 square miles, that is, about one-third the size of Scotland, and of the others, Bangweolo and Mweru are the largest. Lake Tanganyika is included in British mandated territory to which it gives its name.

## Towns

The largest cities of Cape Province are Cape Town, the capital, Kimberley, the centre of the diamond industry, and Port Elizabeth, an important seaport. The chief port and largest town of Natal is Durban, but the capital is Pietermaritzburg (or Maritzburg). Maseru is the chief place in Basutoland, but its population is very small. Bloemfontein is the capital of the Orange Free State, and Pretoria, of the Transvaal; but the largest town in the latter colony and in all South Africa is Johannesburg, the centre of the rich gold-fields of the Witwatersrand. Salisbury is the seat of the administration of Southern Rhodesia, and Zomba of the Nyasaland Protectorate.

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## 34. British South Africa: Geography—II

### Climate, Productions, Trade

Tropical region—Coast climate—Interior climate—Deficient rainfall—Soil—Wheat—Oats and maize—Kaffir corn—Fruits—Possibilities of fruit trade—Vines and wine—Sugar and tea—Coffee and tobacco—Horses—Oxen—Rinderpest—Sheep—Goats—Ostrich-farming—Diamonds—De Beers Company—Gold—Land of Ophir—Witwatersrand—Silver—Copper—Other metals—Coal—Manufactures.

### Climate

Rhodesia and the northern part of the Transvaal are in the tropical belt, but the rest of British South Africa belongs to the south temperate zone. The coast region

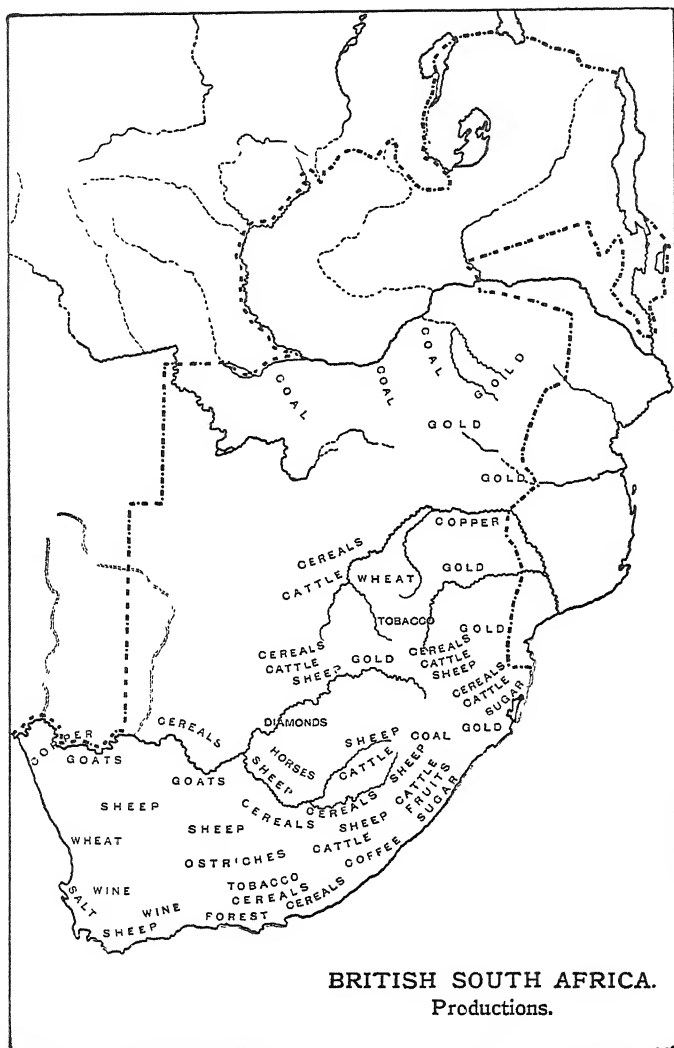
is generally hot and unhealthy, though Cape Town and Durban are on the whole healthy enough. In the interior the climate is drier, and the range of temperature much greater. The nights are often very cold on the elevated plateaus. The rainfall is almost everywhere deficient, and it is limited, in the main, to one half of the year. Many places in the interior of the country have a very healthful climate.

### Cultivated Products

The soil in many parts of South Africa is fertile enough if irrigated, but the area under cereal crops is at present comparatively small. Wheat is not very extensively grown, but it yields fairly well in south-western Cape Colony and the east of the Orange Free State. Oats and maize are of much greater importance, the latter being widely grown by the Kaffirs. The climate is not well adapted to the cultivation of hay, and consequently oats are grown even more for forage than for grain. The natives also cultivate a kind of millet called Kaffir corn.

A great variety of fruits, temperate, sub-tropical, and tropical, are grown in British South Africa, and the fruit trade is likely to expand greatly. Considerable quantities of grapes, pears, peaches, apples, apricots, melons, and other fruits have been exported to London in cold chambers on the Union-Castle mail steamers. The vine was introduced by the first Dutch colonists, and good wine is still produced in fair quantities. Grapes and raisins are also exported. Fruit-farming is an industry still in its infancy in South Africa.

Sugar and tea are grown chiefly in Natal, the labourers

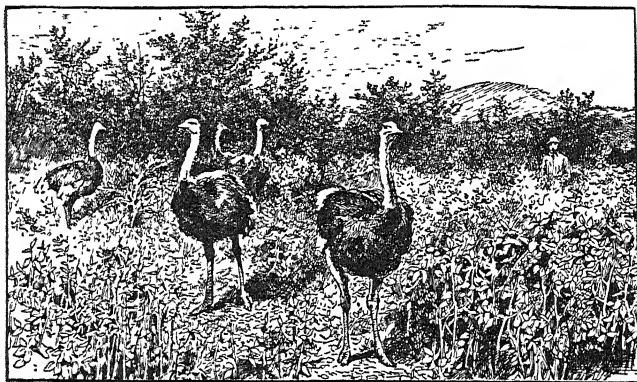


**BRITISH SOUTH AFRICA.**  
Productions.

employed on the plantations being Indian coolies. Coffee and tobacco are cultivated in most of the colonies, the former chiefly in the Nyasaland Protectorate. South Africa is not rich in native timber trees.

### Stock-rearing

More important than the cultivation of the soil in South Africa is the rearing of stock. Horses suffer



On an Ostrich Farm in South Africa

much from a disease called horse-sickness, which first appeared early in the eighteenth century. Oxen are the chief draught animals, but they are of less importance now in the era of railways than they were in the days of the old trekkers. A disease called rinderpest (German word meaning "cattle-plague") reached South Africa about 1896, and during the following few years it caused heavy losses to owners of cattle.

Sheep are reared on the pastures for food and for

their wool. Where irrigation is not practised a sheep needs from two to twelve acres of pasture for its support. The Angora goat has been introduced into Cape Colony, and its hair or wool, known as mohair, is now an important article of export. The native Cape goat, like the Cape sheep, is reared for the sake of its flesh. Ostriches are now kept in captivity in large numbers, and their feathers are plucked from time to time and sold as ornaments for ladies' hats.

### Minerals

So far as the value of the products is concerned, the mining industries are the most important of South Africa. The rich diamond mines around Kimberley are all owned by a wealthy body known as the De Beers Company, which was originally formed by Cecil Rhodes. There are other diamond mines in South-West Africa, the Orange Free State, and the Transvaal; and in the Premier Mine, in the latter colony, the largest diamond in the world was found in 1905.

Gold is of even greater importance than diamonds among the mineral productions of South Africa. It is known that gold was worked at a very early date in Rhodesia, and some even think that Mashonaland is the Land of Ophir mentioned in the Bible. The chief gold-producing colony is the Transvaal, and its richest mines are those in the Witwatersrand district around Johannesburg. South Africa is now the most important gold-producing region of the world. Silver is also found in various places and worked to some extent.

Copper is worked at Ookiep in western Cape Province, and it is also found in Rhodesia and the Transvaal.

Iron, lead, tin, zinc, and other metals are found in small quantities, and some of them are worked to a slight extent. Coal is abundant in British South Africa, and considerable quantities are mined in several of the colonies. The manufacturing industries of South Africa are as yet few in number and of minor importance.

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## 35. Miscellaneous Island Possessions

Ascension—St. Helena—Tristan da Cunha—Falkland Islands—Wool—South Georgia—Mauritius—Isle of France—Port Louis—Indian coolies—Sugar—Railways—Money—Dependencies of Mauritius—Seychelles Islands—Products—French spoken—Dependencies.

### Ascension

*Ascension* is a small island situated in the South Atlantic Ocean, about half-way between the coasts of Africa and South America, in about the same latitude as Pernambuco, in Brazil, and St. Paul de Loanda, in Portuguese West Africa. It is strongly fortified, and is used as a coaling and victualling station for the imperial navy. Considerable numbers of sea-turtle are captured when they come to lay their eggs on the sand. There is a settlement on the island called Georgetown.

### St. Helena and Tristan da Cunha

*St. Helena* is another small island about 800 miles to the south-east of Ascension Island. Before the opening of the Suez Canal it was an important place of call, and it is still a coaling-station for the navy. Though it is not much larger than Ascension, it has a much greater

population. Napoleon lived here as a prisoner from 1815 till his death in 1821. Jamestown is the chief settlement. Farther south there is situated the group of small islands called *Tristan da Cunha*, about half-way across the Atlantic from Cape Town to Buenos Ayres.

### Falkland Islands and South Georgia

The *Falkland Islands*, situated about 300 miles east of Magellan Strait, have a total area of more than three-quarters that of Wales. They comprise two large islands, East and West Falkland, separated by Falkland Sound, and numerous smaller ones. The capital is Port Stanley, on the east coast of East Falkland. The pasturage is splendid, and large numbers of sheep are reared. Wool is exported in large quantity to Britain. Farther east there is another British possession, the island of *South Georgia*.

### Mauritius and Dependencies

*Mauritius* is an important British island in the Indian Ocean, about 600 miles east of Madagascar. It was at one time in the possession of the Dutch, and from 1710 till 1810 it belonged to France, but in the latter year it was taken by the British. The French called it Isle of France, and French is still the chief language on the island.

Mauritius is about two-and-a-half times as large as Anglesey, and has a population of about 380,000. The capital, Port Louis, has more than 50,000 inhabitants. The population includes a large number of Indians, who have been brought over to labour on the plantations.

The island is mountainous and well-wooded. Sugar



is the principal crop and export of the colony, much of it being sent to India, Australia, and South Africa. The island is well supplied with railways and telegraphs. The money in use is that of India. Among the dependencies of Mauritius are *Rodriguez*, the *St. Brandon Islands*, and the *Chagos Islands*, the largest of the last group being Diego Garcia.

### Seychelles and Dependencies

The *Seychelles Islands*, lying several hundred miles to the north-east of Madagascar, were taken from France by Britain in 1794. The chief island of the group is called Mahé, and on it is the capital, Victoria, now a naval coaling-station. Cocoa-nut oil, soap, vanilla, guano, tortoise-shell, coffee, and cocoa are among the articles exported. French is the prevailing language. Several smaller groups are attached to the Seychelles as dependencies.

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## 36. The Importance of Foreign Trade

Important questions—Britain cannot feed herself—She pays for imported food by exporting goods—She exports manufactured goods—She must import raw materials—She pays for imported raw materials by exporting manufactured goods—Foreign trade a necessity—Britain imports manufactures and pays for them in goods—She finds it profitable and convenient to do so—All countries benefit by foreign trade—Partly manufactured imports—Leather and machinery—Trade is individual—Roundabout payment for imports—Bills—Summary of chapter.

### Britain must import Food

Why do we import goods from foreign countries and British possessions? Why do we send goods to foreign

countries and British possessions? Would it be possible for the British people to live and prosper without doing any foreign trade at all? These are important questions, and we shall learn much in the attempt to answer them.

Some of the food-stuffs we import cannot be produced in Britain at all, and yet we find them so convenient and useful that we should not care to do without them. Among these are tea, sugar, grapes, oranges, and maize. Further, we need far more wheat and beef and dairy-produce than we can produce at home, and we must therefore import large quantities from countries which have more than they need themselves. Thus it is clear that the British people cannot get enough food without importing a large amount from other lands.

### How Britain pays for Imported Food

When a person gets any article in a shop he must pay for it, and it is just the same in foreign trade. The British people must pay for their imported goods. They do not pay in money, but in goods. We produce some kinds of goods in larger quantities than we require for our own use, and we send the surplus abroad in payment for the goods we import. Thus a nation cannot import without exporting. A country that had no imports would have no exports.

What sort of goods do we send abroad in payment for our imported food-stuffs? The answer is, manufactured goods of various kinds. Our factories and workshops turn out immense quantities of machinery, cotton goods, woollens, and many other kinds of manufactures. Much of this output is used by ourselves, but a great part is exported to the countries which send us our food-stuffs.

### Imported Raw Materials

In many of our factories we work up raw materials which come from foreign countries and British possessions. Some of these, such as raw cotton, cannot be produced in Britain, and of others, such as wool, our home production is not large enough to supply our factories. Our home wool, too, is not as good as Australian wool, just as our home wheat is in many ways inferior to the wheat we import. Thus, to produce the manufactured goods with which we pay for our imported food, we must import large quantities of raw materials such as cotton, wool, iron-ore, and hides.

We do not, however, obtain raw materials from abroad without paying for them, and we pay for them in the same way as we pay for our imported food, namely, by exporting manufactured goods. It is now clear that we buy food and raw materials from other countries, and pay for them in manufactured goods. Since we must import food to feed our people, foreign trade is an absolute necessity.

### Manufactured Imports

Of the great mass of goods imported into Britain every year, about three-quarters consists of food and raw materials, and the remaining quarter is made up of goods in various stages of manufacture. For these we must pay in the same way as we pay for our imported food-stuffs and materials. We have already seen why we import food for our people and materials for our industries, and we must now enquire why we import manufactured goods. Can we not produce these goods

in our own factories and workshops? Yes, in most cases we can. Why, then, it may be asked, do we import them? The answer is simple. We import them from other countries because we find it to our advantage to do so, and to make other manufactured goods to send abroad in payment for them. If we made them for ourselves instead of importing them, we would simply cease to produce some of the things we make at present. We make the things we can make best and most profitably, and buy from other nations goods which they find it profitable to make. By exchanging their goods in this way all countries are benefited; each gets its wants satisfied better than if it tried to make everything for itself.

Another point about our imported manufactures requires notice. Many of them are only partly manufactured, and require to be finished in British workshops by British labour. Thus, leather is a product manufactured from hides, and is itself worked up into boots harness, and other articles. We import hides and tan them into leather, but we also find it profitable to import leather and make it into boots. If we did not import the leather we would have to make more ourselves, but we would produce less boots, or less of something else. So with machinery. We import machinery, and use it in making all sorts of articles. If we made the machinery ourselves instead of importing it, we would make less of the things which the machinery is used in manufacturing. We find it more profitable and convenient to import the leather and the machinery than to give up much of our manufacture of boots and other more advanced goods.

### Nature of Foreign Trade

We speak constantly of trade between two nations, Britain and Germany, for example; but it must be remembered that the trade is not between the peoples or the governments, but between individual persons. When goods come from Germany to Britain, they have not been ordered by the British nation; they have been ordered by a British merchant or a British firm from a German merchant or firm, and the German exporter will require payment in some other kind of goods at some other time.

Suppose that a German merchant sends goods to a British merchant. The British merchant must pay for them in some way. He does not usually pay in money, but in goods. Moreover, he does not always pay by sending goods directly to the German merchant. He may send goods to a merchant in Brazil, and this merchant may in turn send other goods to the German merchant. The payment may be even more roundabout than this, but it is certain that goods must go out of Britain in payment of the goods which come in from Germany. Part of our imports from Germany are paid for by exports to Brazil and other countries. All this is done through bankers, and by means of business documents known as *bills of exchange*.

### Summary

Let us now see what we have learned. (1) Britain must import food to feed her people. (2) She must pay for this food by exporting manufactured goods. (3) She must import raw materials in order to produce these

manufactured goods. (4) She must pay for these raw materials by exporting more manufactured goods. (5) She finds it profitable to import partly-manufactured goods (such as leather and yarn), and work them up into finished goods (such as boots and cloth). (6) She finds it profitable to import machinery (although she exports a large amount) and use it in making many things for home use and for export. (7) She finds it profitable to import certain kinds of finished goods, and to pay for them by exporting other kinds of finished goods. (8) She must pay for all her imports, including imports of manufactured goods, and to pay for them she must produce other things for export. (9) Trade is carried on, not between nations or governments, but between individual merchants or firms. (10) The payment for goods imported into a country is often made in a very roundabout way. We shall see later that Britain pays for part of her imports by her shipping and in other ways.

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## 37. The Trade of the United Kingdom—I

Retrospect—General character of United Kingdom trade—Trade of Colonies—Total value of British trade—Payment for imports—Investments and loans—Shipping—Payment is not in money—Case of United States—British trade is chiefly with foreign countries—Commercial divisions of the empire—Values of imports from them—Values of exports to them—Chief foreign customers of Britain.

### Trade of the Empire

In the previous chapters we have learned something of the history, geography, products, and government of

all the important parts of the empire. We must now examine the trade of the empire a little more closely, and in doing so we shall begin with the trade of the mother-country. The United Kingdom carries on a very large trade with all parts of the world, both foreign countries and British possessions. It imports goods of many kinds from them, chiefly food-stuffs and raw materials, but also many manufactured articles, and it exports to them large quantities of manufactured and other goods. The colonies also trade with each other, and directly with foreign countries, but the most important part of the trade of the empire is that in which the British Islands are concerned.

### Trade of the United Kingdom

The total value of the goods imported into the United Kingdom in a year is now over 1200 million pounds, but the total value of exports is much less, about 900 million pounds, of which about one-fifth represents foreign and colonial merchandise re-exported from our shores. Thus the total annual trade of the United Kingdom is 2100 million pounds, that is, more than £48 for each man, woman, and child in the country. This is a very much larger total trade than that of any other country. The details of this huge trade are not easy to grasp and retain in the memory, but some points connected with it should be clearly understood at the outset

### Payment for Imports

First of all, why do our imports so greatly exceed our exports in value? Is it true that we pay for our

1000 millions' worth of imports by only 800 millions' worth of exports? A rough answer is as follows. We pay for the 1000 millions' worth of imported goods partly by exported goods and partly by performing certain services for people in other countries. Thus Britain has lent enormous sums to foreign countries, and the annual interest on these sums is paid chiefly in goods and not in money. Then, again, British shipowners possess half the shipping of the world, and they earn a very large amount every year by carrying goods to and from British ports and between foreign countries. This amount also comes into Britain chiefly in the form of goods. The people of the United Kingdom do other similar services for people abroad, and get paid for them in imported goods.

It should be kept constantly in mind that trade between nations is really a species of barter, the goods imported being paid for by goods exported. In ordinary times, money is only used to adjust balances. During the war this usual course of trade was destroyed for the time being, and a great deal of gold was sent by Britain to the United States to pay for foodstuffs and munitions of war. But in normal times goods balance goods, or goods and services together balance them.

Payment to Britain for service in carrying goods for other countries comes in the form of goods. So, although we appear to import more than we export, it is not by any means the case that we get the surplus of imports for nothing. We pay for them by services rendered. Also a certain amount of the surplus represents interest payable to people in Britain for moneys invested abroad in railways, mines, and other enterprises.



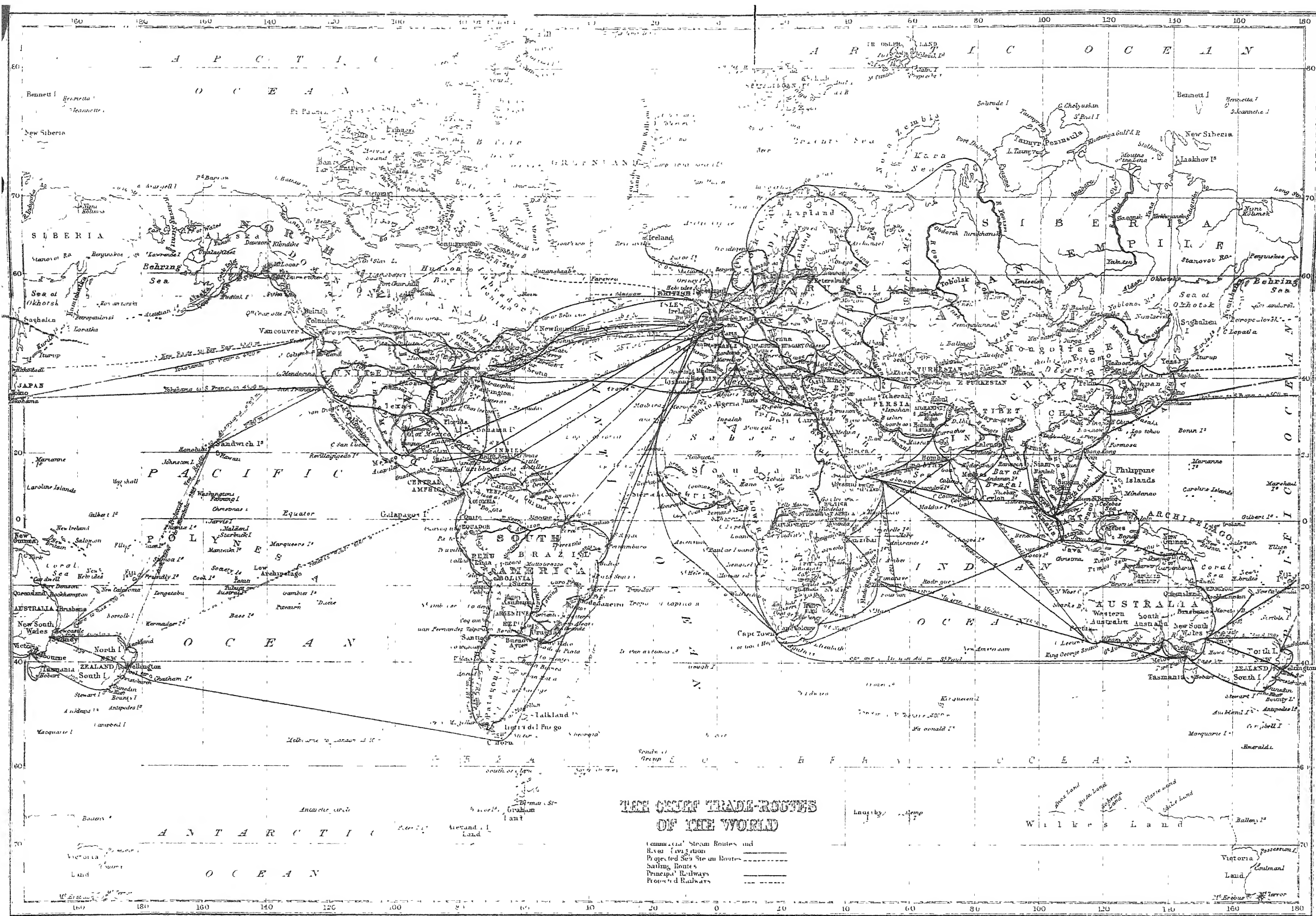
### Imperial Trade and Foreign Trade

The next point to be firmly grasped is that at present Britain obtains the greater part of her imports from foreign countries and not from British possessions. Only about one-third of our imports come from British possessions, whilst the remaining two-thirds are obtained from foreign countries. A similar statement is true of the exports from Britain. Of these about two-fifths in value are taken by British possessions, whilst the remaining three-fifths go to foreign countries.

The extent of our imperial trade may best be shown by considering the empire as divided into seven main commercial divisions, and an eighth comprising all the rest. These divisions are: (1) Australasia, including New Zealand; (2) British India and Ceylon, &c.; (3) Canada and Newfoundland; (4) Egypt; (5) South Africa; (6) the West Indies, together with British Honduras and British Guiana; (7) East Africa, including Kenya Colony, Uganda Protectorate and Tanganyika Territory; (8) West Africa, including Nigeria, Gold Coast, &c. Egypt, though here included in the empire, is now recognized as a sovereign state.

The order of arrangement in importance as exporters to Britain varies, of course, from year to year. From Australasia we import annually goods to the value of 110-120 million pounds; from the East Indies, to about 115 million pounds; from North America, to 72 million pounds; from Egypt and Sudan, to 36 million pounds; from South Africa, to 24 million; from the West Indies, to 7 million; and from West Africa, to 15 million pounds.

The order of importance of the above divisions as



importers from the United Kingdom likewise varies considerably from year to year. The East Indies take our goods to the value of 105 million pounds a year; Australasia, 88 million pounds; South Africa, about 31 millions, North America, about 31 millions; Egypt and Sudan, 17 millions; the West Indies, about 5 millions; and West Africa, 14 millions.

The leading foreign countries from which we import are the United States, Argentina, France, Denmark, the Netherlands, Germany, Belgium, Sweden, Switzerland, and Spain. Our annual imports from the first are valued at about 230 million pounds, rather less than three-fourths the value of our imports from the whole empire. The chief foreign countries which take our exported goods are France, the United States, the Netherlands, Germany, Japan, Belgium, China, Argentina, and Italy.

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## 38. The Trade of the United Kingdom—II

Bewildering variety of commodities—Classification of them—Relation of imports to exports in each class—United Kingdom a manufacturing country—Industrial Revolution—Trade in living animals—Importance of food and drink imports—Classification of food, drink, and tobacco—Importance of raw materials imported—Classification of raw materials—Partly-manufactured articles—Instances to illustrate the term—Classification of manufactures.

### Classification of Commodities

The commodities imported into and exported from the United Kingdom are of almost bewildering variety, but they can be classified in groups, and such a classification

makes it easy to retain in the mind the main features of our trade. We may start with a main division of all the articles of import and export into five great groups, namely: (1) food, drink, and tobacco; (2) raw materials; (3) partly - manufactured articles; (4) manufactured articles; and (5) some miscellaneous articles. In the first two groups, especially in the first, our imports greatly exceed our exports; in the fourth, that of manufactured goods, we export much more than we import; and in the third our imports and exports do not differ widely in value. About three-quarters of our imported goods consist of food for our people and raw materials for our industries; and by far the largest part of our exported goods consists of partly or completely manufactured articles made in our factories and workshops.

### Industrial Revolution

These facts show clearly that the United Kingdom is mainly a manufacturing country and only secondarily an agricultural one. This was not always the case; indeed, this state of affairs dates only from the latter part of the eighteenth century, when British industry was completely transformed by a series of remarkable inventions and by other changes. These changes were of such enormous importance that they have been called the Industrial Revolution.

### Food, Drink, and Tobacco

The chief articles under the above heads will be dealt with later, but some general facts may be given here. Our imports of *living animals*, partly for food and partly not, are valued at about 20 million pounds per

annum, but our imports under this head are only about two millions. The chief items in the imports are oxen and bulls from the United States and Canada, and horses from the United States.

More than two-fifths of our imports in value belong to the section *food, drink, and tobacco*. The United Kingdom cannot grow such articles of food as tea and sugar, and does not grow nearly enough of those suited to the climate, such as wheat. Moreover, it is certain that we shall always have to depend to a very large extent upon imports from abroad for our food-supply.

Our total imports of food, drink, and tobacco amount to over 570 million pounds' worth a year, whilst our exports under the same head are valued at only about 55 million pounds. This class of imports and exports may be arranged in nine groups, as follows: (1) corn, grain, meal, flour, &c.; (2) meat and fish; (3) dairy produce; (4) fruit and vegetables; (5) tea, coffee, and cocoa; (6) sugar, confectionery, &c.; (7) alcoholic liquors and mineral waters; (8) tobacco, cigars, &c.; and (9) spices and miscellaneous articles. Tobacco, though not a food, is included in the food and drink group for convenience. Under every one of these nine heads we import more than we export, in most cases very much more.

### Raw Materials

Our imports of *raw materials* come next in value to those of food and fodder. They are of immense importance, because without them our manufacturing industries could not go on. Of goods belonging to this group we receive over 420 million pounds' worth each year,

whilst we export only about 100 million pounds' worth. The following classification of raw materials will give some idea of the scope of the term, and will be amplified in later chapters: (1) coal, metallic ores, and other minerals; (2) materials used in textile manufactures; (3) hides, skins, hair, &c.; (4) gum and caoutchouc; (5) oil-making materials; (6) paper-making materials; (7) wood and timber; and (8) manures and miscellaneous articles. In the first of these sub-divisions our exports are not much less than three times our imports, the reason being found almost entirely in our enormous export of coal. Indeed, coal accounts for almost three-fourths of our exports of raw materials. In all the other seven we import much more than we export, and of gum, caoutchouc, and oil-making materials we have no native exports at all.

### Partly-Manufactured Articles

The excess of imports over exports, which is enormous in food, drink, and tobacco, and not so great in raw materials, is comparatively slight under the next head, *partly-manufactured articles*. In this group we import to the value of about 45 million pounds, and export to that of fully 30 million pounds. The articles under this head are at the same time finished products and materials of manufacture. Thus, yarn is the final product of the spinning-mill, but it is the starting material of the weaving-factory. Pig-iron and angle-iron are the final output of certain branches of the iron industry, but they become in turn the raw material, as it were, of other branches. Leather is the product of the tanner's industry, but it is the shoemaker's material.

### Manufactured Articles

In the last main division, *manufactured articles*, our exports are still far ahead of our imports, though our imports have been steadily increasing in recent years. Here we may distinguish six subordinate groups: (1) textiles; (2) metal manufactures and machinery; (3) apparel; (4) chemicals; (5) ships; and (6) miscellaneous. We import under all the groups together to the value of over 300 million pounds per annum, but our exports have a value of some 620 million pounds. Under (1) and (2) our exports are enormously greater than our imports; under (3) and (4) the excess of exports is not so great, but still substantial; under (5) we have almost no imports, and in (6) we import more than we export.

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## 39. The Trade of the British East Indies

Chief colonial trade is with East Indies—India industrially and commercially different from Britain—Nature of Indian trade—Excess of exports—India chiefly agricultural—Land trade small—Value of sea-borne trade—Sources of the imports—Destination of the exports—Chief groups of imports—Cotton yarn and goods—Iron, steel, and copper—Railway plant, &c.—Sugar—Petroleum—Other imports—Chief groups of exports—Jute—Cotton—Rice—Wheat—Tea—Opium—Oil-seeds—Hides and skins—Other exports—Rivers and railways—Steamship communication—Money—Ceylon's trade—Tea—Other exports—Chief imports.

### Nature of Indian Trade

The largest part of our colonial trade is done with our East India possessions, of which the Indian Empire

is the chief. From an industrial and commercial point of view, India is very different from the United Kingdom. Its exports are of considerably greater value than its imports. The exports are mainly raw materials and partly-manufactured goods, whilst the imports consist almost entirely of manufactured articles. The reason for this excess of exports is practically the same as that already given for the excess of exports in the case of the United States.

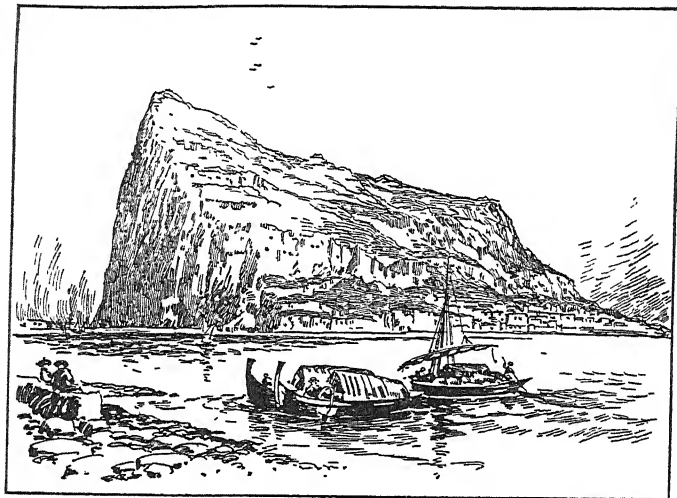
### Value of Indian Trade

India is still chiefly an agricultural country, though some manufactures of a European kind are making steady progress. More than three-fifths of the population is directly dependent on agriculture for a livelihood. Part of the trade of India is carried on over the land frontiers with Central Asia, Tibet, China, and Siam, but by far the largest and most important part is sea-borne. The total annual value of sea-borne imports is over 230 million pounds, of which some 170 million pounds represents private merchandise, and the rest government stores and treasure. The total annual sea-borne exports are valued at about 270 million pounds, of which fully 250 million pounds represents private exports of Indian produce and manufactures, the rest being government stores, treasure, and re-exports of foreign goods. Thus India's total sea-borne trade is valued at some 505 million pounds a year, of which 420 millions or more represents the true private trade. The total land trade amounts to 17 or 18 million pounds a year. We must now learn something in detail about the private sea-borne trade.



### Whence the Imports come

Of the imports Britain sends about two-thirds About four-fifths of the total imports come from European countries, including Great Britain. Outside of Europe



Gibraltar, from the Isthmus

the chief importers into India are the British colony of Mauritius, China, Java, the Straits Settlements, and the United States. The imports from the Straits Settlements should, however, be mostly credited to various other countries, since the trade of the Settlements is mainly transit. Australasia, Egypt, and Zanzibar do a small import trade into India.

### Where the Exports go

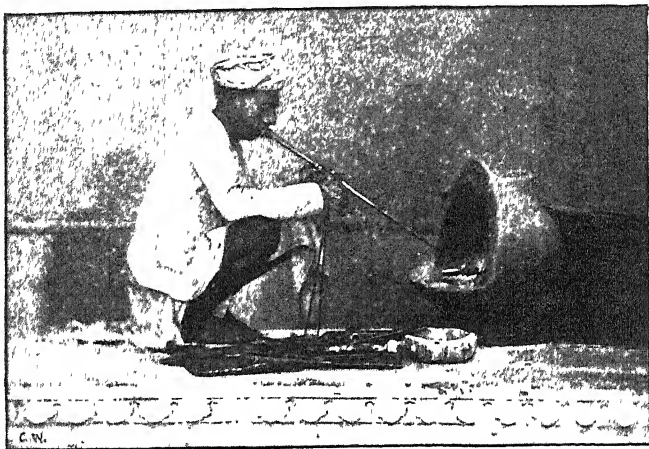
The United Kingdom takes of goods exported from India about one-fourth of the total. More than half of the value of Indian exports represents goods sent to Europe, the chief European customers after Britain being France, Belgium, and Italy. Japan takes a larger proportion of Indian exports than any country except Britain, and outside Europe the next largest importer from India is the United States. Then come Germany, Italy, France, Ceylon, and China. The imports from India to Singapore really go to other countries for the most part, and a large part of the exports to Egypt is transhipped to European and other countries. Australasia is an increasingly important customer of India, and fair quantities of exports go to Mauritius, Zanzibar, Natal, Cape Colony, and other British possessions.

### Chief Imports

The principal imports into India are, in order of value: (1) cotton yarn and manufactures; (2) metals and metal manufactures; (3) sugar; (4) mineral oil or petroleum; and (5) woollen and silk goods and apparel. Almost the whole import of cotton yarn and cotton goods is sent from the United Kingdom. The yarn import is decreasing owing to the development of the cotton-spinning industry in India, and native cloths are also more and more taking the place of imported cloths. Iron and steel are the chief metals imported, copper being the only other sent in any quantity. Native-made iron tends to replace much of the imported iron. The United Kingdom sends

most of the iron and steel, but Belgium exports a considerable amount, especially of steel.

Most of the railway plant and rolling-stock, the machinery and mill-work (for the cotton and jute mills and tea-gardens), and the hardware and cutlery are



Indian Goldsmith, with Blow-pipe

imported from the United Kingdom. Mauritius sends the largest proportion of the imported sugar, but until recent years an increasing amount of beet-sugar was received from Austria and Hungary and other countries of the European continent. Russian petroleum formed the largest part of the import of mineral oil, and the import from the United States was steadily declining. Burma produces much of the oil needed in the country. Besides the principal imports above enumerated, we need only mention chemicals, especially artificial indigo from Europe, which is replacing natural indigo; alcoholic

liquors; provisions of various kinds; and coal, a declining import owing to the development of the Indian mines.

### Chief Exports

Indian exports may be classified as: (1) food-stuffs; (2) raw materials. (3) dyes and narcotics; and (4) wholly or partly manufactured goods. Jute and its manufactures together form a large part of the exports. The crop is almost all grown in Bengal, and the fibre is worked up in mills at Calcutta. Of equal importance is cotton and its manufactures, both yarn and piece-goods. The raw cotton goes chiefly to Japan and China, and the manufacture is carried on mainly in the town of Bombay. Rice, principally from Burma, is the next largest export, and wheat exports from the Punjab vary greatly in amount. Tea, another staple export, goes mostly to Britain. Opium is exported chiefly to China, and oil-seeds, especially linseed, rape-seed, and sesamum, mainly to Europe. The export of hides and skins, raw, dressed, and tanned, is very considerable, especially in seasons of drought, when cattle die in large numbers. Indigo, coffee, raw wool, silk, saltpetre, lac, teak, and spices are other exports of some importance.

### Trade Facilities

The internal trade of India is aided by navigable rivers, and especially by the railways, most of which belong to the Indian government. The ports are visited regularly by steamships of several British and continental lines. Since the opening of the Suez Canal a vessel can reach Bombay in 24, and Calcutta in 32 days

from the time of leaving London. There are direct lines of steamers from India to South Africa and Australasia, and numerous vessels are engaged in the coasting trade of the smaller ports. British gold coins can be used in all money transactions in India, but the ordinary standard coin is the silver rupee, which is equal to 1s. 4d. or one-fifteenth of a pound sterling

### Ceylon

Ceylon exports rather more than she imports. About half her exports are sent to the United Kingdom, from which she receives less than a third of her imports. Tea is by far the most important export, others being, in order of value, cocoa-nut products, plumbago, cocoa, areca-nuts, and coffee. The principal articles of import are rice and other grains, coal and coke, cotton goods, and salt-fish.

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## 40. The Trade of Australasia

Chief trading possessions in Australasia—Value of Commonwealth trade—Its distribution—Trade of the individual states—Trade with British possessions and foreign countries—Chief articles of export—Wool—Gold—Copper—Coal—Silver—Lead—Tin—Stock—Animal products—Meat—Wheat—Other exports—Chief imports—Manufactures—Trade of New Zealand—Its distribution—Wool—Other exports—Imports—Manufactures—Trade of Fiji—Railways—Mails—Steamship routes—Pacific cable.

### Trade of the Commonwealth

The only British possessions of commercial importance in Australasia are the Commonwealth of Australia, New Zealand, and the Fiji Islands. A large part of the trade

of these possessions is carried on amongst themselves, but they are doing an increasing business with Britain, British possessions outside Australasia, and foreign countries.

The total annual value of the imports of the Commonwealth is nearly 157 million pounds, and of the exports, over 162 million pounds. Fully one-half of the exports are sent to the United Kingdom, and about one-quarter to other British possessions, the remaining quarter being taken by foreign countries. Of the imports into the Commonwealth the United Kingdom sends rather more than a half, and other British possessions rather less than one-eighth.

More than a third of the total external trade of the Commonwealth is carried on by the state of New South Wales, and fully one-quarter by Victoria. Queensland comes next with about one-eighth of the total external trade, and the order of the remaining states in this respect is South Australia, Western Australia, Tasmania. In every case the exports exceed the imports in value, and in Western Australia and Tasmania the value of exports is nearly double that of imports.

The imports into Australia from British possessions come mostly from the British East Indies and Canada, and to a less extent from New Zealand. During the Boer war the exports to South Africa reached a very high value, but in ordinary times the chief markets within the empire for Australian goods are the East Indies and New Zealand. The chief foreign trade is that carried on with the United States and its possessions, but Japanese trade with Australia is important and increasing.

### Chief Exports

The leading export of all the states except Western Australia and Tasmania is wool, and the chief wool-exporting states are New South Wales and Victoria. Most of the exported wool is sent to Britain, where it is manufactured into woollen stuffs of many kinds. The principal export of Western Australia is wheat, and that of Tasmania is zinc. Gold is also exported from Western Australia, and South Australia exports a considerable amount of copper.

The most important of the other mineral exports are coal, which New South Wales sends abroad in large and ever-increasing quantities; silver, a leading product of New South Wales; lead, chiefly from New South Wales; and tin, especially from Tasmania. Live stock are exported in large numbers from New South Wales, Queensland, and Victoria, and various animal products, such as butter, cheese, tallow, hides and skins, are also important exports. Meat of various kinds, preserved, salted, and frozen, is a leading article of export from Queensland, New South Wales, and Victoria. Victoria, South Australia, and New South Wales are exporting increasing quantities of wheat. Of the other exports we need only mention wine, from South Australia and Victoria; timber, from Western Australia; sugar, from Queensland; and fruit and preserves, from Tasmania.

### Chief Imports

The imports into Australia consist principally of cotton, woollen, linen, and silk manufactured goods; iron and steel and their manufactures, including all kinds of ma-

chinery; tea, sugar, tobacco; grain and flour, fruit; mineral oil; spirits, beer, and wine; leather and leather manufactures; and timber of various kinds. Australia has as yet very few manufactures, and none of more than local importance. The total number of workmen employed in them is over 420,000, and the products are mainly for home use.

### Trade of New Zealand

The annual value of the imports into New Zealand is about 52 million pounds, and of the exports from it, 55 million pounds. Fully three-quarters of the exports are sent to the United Kingdom, from which more than a half of the imports are obtained. About a fifth of the imports come from Australasia, especially New South Wales and the Fiji Islands, and to these colonies about one-sixth of the exports are sent. The import and export trade of New Zealand with the United States is large and steadily increasing. Raw wool is the principal article of export, others being preserved, frozen, and chilled meat, gold, oats and wheat, butter and cheese, kauri gum, tallow, timber, and phormium or New Zealand flax. The imports are similar to those sent to Australia, and the remarks about Australian manufactures apply to those of the sister colony of New Zealand.

### Trade of Fiji

The total trade of the Fiji Islands is valued at about  $2\frac{1}{2}$  million pounds a year, the exports being  $1\frac{1}{2}$  million and the imports 1. The direct trade with Britain is small, and the greater part of the trade is carried



on with Australia and New Zealand. Sugar, copra, and bananas are the principal articles exported.

### Trade Facilities

Australia has over 24,000 miles of railway, and New Zealand over 3000 miles. Almost the whole of these 28,000 miles belong to the states and not to private companies. Internal communication is effected mostly by railway, since the rivers are of little value for navigation. The British mails for Australia are sent across the European continent to Brindisi or Marseilles, whence they are taken by steamer through the Suez Canal, down the Red Sea, past Aden, and by way of Colombo to Fremantle, Adelaide, Melbourne, and Sydney. The steamer reaches Fremantle about thirty-four days after leaving London, and in nine days more it arrives at Sydney.

The mails for New Zealand are sent across the Atlantic to New York, thence across the United States to San Francisco, whence they are taken by steamer. Since the opening of the Panama Canal it has been possible to send mails direct without transshipment. The time from London to Auckland by this route is about thirty days, and to Sydney thirty-four days. A similar route is that by Vancouver, in British Columbia, to Honolulu, Fiji, Brisbane, and Sydney. Other lines of steamships reach Australia from England by rounding the Cape of Good Hope. The time from London to Sydney by this route is about forty-eight days. A French line has Marseilles as starting-point, and a German one starts from Bremen, both going by the Suez Canal. A submarine cable now runs from Vancouver, in Canada, to the Fiji Islands and Norfolk Island, and thence to Queensland and New Zealand.

## 41. Trade of British North America

Basis of Canadian prosperity—Value of Canadian trade—Its distribution—Exports classified—British imports from Canada—Canadian imports—British exports to Canada—Manufactures—Trade of Newfoundland—Distribution—Chief commodities—Money—Waterways and railways—Steamship lines—Pacific and other cables.

### Canadian Industry

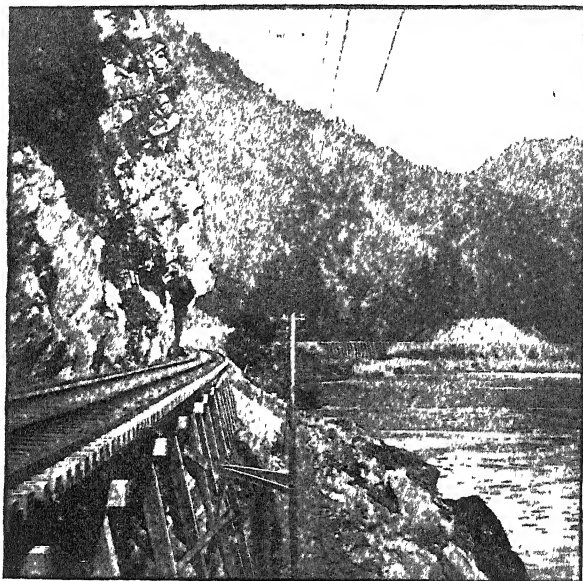
We have seen that the United Kingdom is essentially a manufacturing country, that India is a great agricultural country, that Australia is chiefly dependent on pasture-farming and mining. Canada differs from all these, since her prosperity rests at once on agriculture and mining.

### Canadian Trade

The exports of the Dominion of Canada have now an annual value of over 260 million pounds, and the imports are valued at about 190 million. About a quarter of the imports are obtained from the United Kingdom, to which rather more than a quarter of the exports are sent. The United States sends roughly three-fifths of the total of Canadian imports, and about a third of the exports go to that country. The trade with British possessions is small, and the only European countries having any considerable trade with Canada are France, Belgium, and Holland. Thus Canada's chief customer is the United States, and next comes the United Kingdom. These two together account for about nine-tenths of the total trade of Canada.

## Exports and Imports

The leading exports of the Dominion may be classified as follows: (1) Grain and flour, especially wheat and maize; (2) animal products, such as cheese, butter, bacon

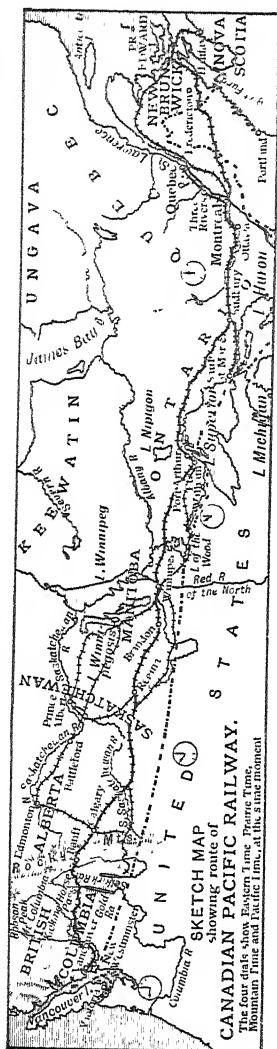


Photo

York &amp; Son, London

A Cañon of the Fraser River through which runs the Canadian  
Pacific Railway

and hams, and eggs; (3) fish, notably canned salmon and lobsters, (4) timber and wood pulp; (5) live animals, especially horned cattle; (6) minerals, especially gold, coal, copper, lead, silver, and nickel; (7) furs, skins, hides, leather, &c.; and (8) manufactures, especially



agricultural implements and machinery. The chief British imports from Canada are timber, cheese, wheat, bacon and hams, fish, and apples.

Canada imports many kinds of manufactured goods, particularly iron and steel goods, including machinery; cottons, silks, woollens, and other textiles; cigars, cigarettes, and other forms of manufactured tobacco; wines and spirits; paper and its manufactures; and various miscellaneous articles of apparel. Her imports also include coal, tea, sugar, raw tobacco, petroleum, raw cotton, and raw wool. From Britain she takes mainly iron and steel goods and textiles. Canadian manufactures are developing, but they are not yet of great importance.

### Trade of Newfoundland

The dominion of Newfoundland, which includes the Labrador coast, exports goods to the annual value of seven million pounds, and imports to the value of nearly five million.

Rather more than a fifth of her exports go to Britain, and among other chief importers from Newfoundland are Brazil, Portugal, United States, Canada, and Gibraltar. Britain sends less than a third of the imports, and the United States rather more, but Canada is in some years ahead of both of these countries. The principal exports are dried cod-fish, pickled herrings and salmon, preserved lobsters, iron, copper, cod-liver oil, seal-oil, and seal-skins. The imports are similar to those of the neighbouring Dominion of Canada.

### Trade Facilities

Canada and Newfoundland count their money in dollars and cents, as in the United States, instead of in pounds, shillings, and pence, as in Britain. The splendid natural waterways of the Dominion have been supplemented by over 40,000 miles of railway, and several new lines are proposed. There are regular services of steamships from Liverpool and Glasgow to the St. Lawrence ports in summer, but in winter these ports are blocked by ice, and the steamers have to go to Halifax, in Nova Scotia, St. John, in New Brunswick, or to Portland, in the state of Maine. The crossing takes fully six days. The line from Vancouver to Australia in connection with the Canadian Pacific Railway has been already mentioned under Australasia, and the Pacific cable has also been referred to. There is another line from Vancouver to Japan and China in connection with the Canadian Pacific Railway. Several cables under the Atlantic connect Canada with the mother-country.

## 42. Trade of British South Africa

Of what the Union of South Africa is composed—Value of total trade of British South Africa—Intercolonial trade—British share—Trade of Cape Colony—Exported and imported commodities—Railways—Steamship lines.

### The Union of South Africa

The Union of South Africa, formed in 1910, consists of the Cape of Good Hope, Natal, the Transvaal, and the Orange Free State. The total value of all goods imported into the Union of South Africa is now about 60 or 70 million pounds a year, and the exports are valued at a rather larger amount. There is, in addition to this fairly considerable external trade, an intercolonial trade of some value. The United Kingdom has the largest share of the trade of the Union of South Africa. Of the total import trade of over 100 million pounds in 1920, the share of the Empire was 70 million, and out of an import trade of 61 million in 1924 the share of the British Empire was nearly 40 million.

### Trade of Cape Province

Cape Province contributes most to the total trade of South Africa; but as, since the union, records are not kept for each province exact figures cannot be given. Most of the trade is with Great Britain. The United States, the Argentine Republic, Canada, and Australasia share most of the remainder among them. The total annual value of the exports of Cape Province to Great Britain was in 1921 about 12 million. Argentina, India, Natal, and Germany are other leading importers of Cape produce.

The list of exports from the Union of South Africa is headed by gold, chiefly from the Transvaal mines, and wool from the Cape. After these come diamonds from the Cape or the Transvaal, hides and skins, coal, wattle bark, sugar, ostrich feathers, fruits, the hair of Angora goats, tin ore, and a few other commodities in smaller quantities, chiefly wine. The principal imports are: food and drink; cotton manufactures and apparel; implements, machinery, and iron and steel manufactures; leather manufactures, including boots and shoes; woollen manufactures; wood and timber, including furniture; oil, drugs, and chemicals.

### Trade of Natal

With Natal as with the Cape it is impossible now to give definite figures of the imports and exports. Britain sends some 6 millions' worth of goods, about one-half of its imports, and receives some 5 millions' worth in return, about the same share of its exports. The other chief importers into Natal are the United States, Australasia, Argentina, Canada, and India. Its exports are taken mostly by Cape Province, Argentina, and India. The principal articles of export are wool, coal, raw sugar, hides and skins, mohair, and wattle bark, besides gold; and the imports are similar to those of Cape Province.

### Trade Facilities

The rivers of South Africa are of no value for internal communication, but there are now some 12,000 miles of railway. Steamers leave Southampton weekly for Cape Town and Durban, calling at Madeira or the Canary Islands. The fastest of these arrive at

Cape Town about sixteen days after sailing from Southampton. Another line of steamers maintains a direct service from London to Natal *via* East African ports, and there are also regular steamship connections with India, Australia, New Zealand, and elsewhere.

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### 43. Trade of the British West Indies

Value of the trade—Trinidad—Jamaica—Barbados—Other commercial islands—Distribution of the trade—Chief exports—British imports from West Indies—Chief imports—British exports to West Indies—Present position of sugar industry—The remedy—Railways and steamers—British Guiana—British Honduras.

#### West Indian Trade

The total trade of the British West India Islands amounts to a value of about 30 million pounds a year, but this includes trade carried on by the island-groups with one another. The value of the imports exceeds that of the exports by a million pounds or so.

The largest part of this trade, namely, more than one-third, is carried on by Trinidad and Tobago, which are now regarded as a single colony. Jamaica comes second, with fully one-quarter of the total trade of the islands, and this is one of the few British West Indian islands whose exports are usually in excess of their imports. Barbados is the only other island with a really large trade, her share of the total being more than one-seventh. These three colonies together carry on five-sixths of the total trade of the British West Indies. Of the other islands the most important commercially are Grenada, the Bahamas, and St. Lucia.



About one-quarter of the total exports of the British West Indies is sent to Britain, and a rather larger proportion of the imports is obtained from Britain. Trinidad has a large trade with the United States and Venezuela, and the greater part of the trade of Jamaica and Barbados is with the United States. Canada does a larger trade with the West Indies than any other British colony.

### Chief Commodities

Cocoa and raw sugar are the principal exports of Trinidad, but others of importance are crude petroleum, petrol, and asphalt. Bananas are the leading export of Jamaica, others of importance being raw sugar, coffee, rum, oranges, logwood, and cocoa. Sugar is the chief article of export from Barbados, and molasses is second in order. From the Bahamas sponges, the fibre of the sisal hemp, and pine-apples are the chief exports. The Leeward Islands and St. Lucia are mainly exporters of sugar, but cocoa is the principal article sent out of Grenada. The salt of Turks Islands and the lime-juice of Montserrat should also be mentioned. British imports from the West Indies are principally sugar, cocoa, rum, fruits of various kinds, spices, and timber.

The British West Indies import textile manufactures, fish, flour, rice, meat, hardware, machinery, leather manufactures, and other commodities of a similar kind. Their imports from the United Kingdom consist of manufactured goods, such as cottons, woollens, machinery, saddlery, and spirits.

### The Sugar Industry

The cane-sugar industry of the West Indies has not been in a flourishing condition in recent years. Beet-sugar, manufactured in various countries of the European continent, has been so cheap as to take the place of cane-sugar to a large extent. Some of the West Indian islands, such as Grenada, are not seriously affected by this state of affairs, because they have come to depend more on cocoa and other products than on sugar. Those islands which have suffered will probably have to follow this example, and pay more attention to other crops suited to the climate.

### Trade Facilities

Internal communication is of less importance in the West Indies than in Australia or South Africa, but there are railways in Jamaica, Trinidad, and Barbados. Several lines of steamers maintain communication between the West Indies and Britain, among them being an imperial mail service assisted by the British government.

### British Guiana and British Honduras

British Guiana, on the north coast of South America, has a total trade of over six million pounds in value. The larger part of it is done with the United Kingdom, but the United States is not far behind. Raw sugar is by far the most important export, but gold, rum, and cocoa are also exported in fair quantities. The imports are similar to those of the West India Islands.

The total trade of British Honduras, in Central America, has a value of about one and a half millions. Rather

less than half of this trade is carried on with the United Kingdom. The principal exports of the colony are mahogany, logwood, fruits, and sugar.

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#### 44. Trade of British West Africa, British East Africa, and Mauritius

Trade of West African colonies—Shares of the colonies—Shares of the chief trading countries—Chief exports—Chief imports—Cotton in West Africa—Railways and steamship lines—Ports—Trade of East Africa—Chief commodities—Indian merchants and money—Steamship lines—The new railway—Trade of Zanzibar—Chief commodities—Trade of Mauritius—Chief commodities—Railways—Indian money.

##### West African Trade

The British colonies in West Africa imported goods in 1924 to the value of about 24 millions, and exported goods to the value of about 28 millions. These figures represent the external trade of the colonies but not trade carried on amongst themselves. The colony and protectorate of Nigeria has more than half of this trade. The Gold Coast comes next in commercial importance, and after it Sierra Leone. Gambia is the least important British possession in this region.

More than one-half of the total imports come from the United Kingdom, and about a half of the exports are taken by the United Kingdom. Gambia trades chiefly with the neighbouring French possessions, and Britain's share in her commerce is small. The greater part of the imports of all the other colonies is supplied

by Britain, but in the export trade Germany took formerly a very prominent position. The other foreign countries which have an appreciable share in the trade are France, Holland, and the United States.

The leading exports from Nigeria are palm-oil and palm kernels, but rubber, shea-butter, ivory, cotton, and cocoa are also worthy of mention. The Gold Coast exports principally cocoa, gold, kola-nuts, and timber, but also palm-oil and kernels; and Sierra Leone's chief exports are palm kernels, kola-nuts, rubber, and palm-oil. Gambia's principal product is ground-nuts. The chief commodities imported into British West Africa are cotton goods, machinery, hardware, building materials, apparel, provisions, spirits, and tobacco. Cotton manufactures for clothing purposes are by far the most important of these. Several parts of West Africa already grow cotton with success, and there is sure to be a great extension of cotton-growing here in the near future.

There are railways in Sierra Leone, the Gold Coast, and in Southern and Northern Nigeria, and new lines are being steadily constructed. Several lines of steamships maintain regular communication between Liverpool and the chief ports of West Africa, such as Freetown, Lagos, and Calabar. Despite their climate, the British possessions on the Guinea coast are steadily prospering, and are likely to become still more prosperous. Nigeria is rich in minerals including coal, tin, galena, and silver.

### East African Trade

The annual value of goods imported into the various ports of British East Africa is about £10,000,000, and the

exports are valued at approximately £15,000,000. The chief exports are: cotton, coffee, grain, and oil seeds, fibres, carbonate of soda, ivory, rubber, and wool. Of the total trade of East Africa, more than half belongs to Kenya, where every possible effort is being made to increase the growth of cotton, and the imports are mainly cottons. There is direct steamship communication between London and Mombasa *via* the Suez Canal. The railway from Mombasa to Lake Victoria is having various branches run from the main line to develop the cotton growing of the colony.

The exports and the imports of Zanzibar are each valued at over 2 million pounds a year. The imports are brought chiefly from British India and Tanganyika Territory, and the exports are taken chiefly by Tanganyika Territory, India, British East Africa, and France. Cloves and copra are the main exports from Zanzibar, and the imports are chiefly rice, petroleum, and cotton goods. Uganda exports are valued at 5 million pounds, and the value of Tanganyika exports is 3 million pounds.

### Trade of Mauritius

The island of Mauritius has a trade valued at nearly 8 million pounds a year. About half of it is carried on with India, after which the chief customer is Britain. There is a considerable export to South Africa, and a fair trade is carried on with France, Australasia, and the United States. Raw sugar is by far the most important article exported, among the others being aloe fibre, molasses, and vanilla. The leading imports are rice, coal, manures, apparel, hardware, and machinery.

Mauritius has more than 100 miles of railway. Accounts are kept in rupees.

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## 45. Wheat

The cereals—Importance of wheat—Wheat a grass—Bearded wheats—Wheat a temperate crop—Suitable soil—Winter and spring wheats—Wheat as bread-making cereal—White bread—Bran—Brown bread—Sponginess of bread—British wheat area declining—Scotland's wheat-lands—England's wheat-lands—Britain's yield per acre—British produce and consumption of wheat—Sources of imported wheat—Wheat in India—Wheat in Canada—Australian and New Zealand wheat—Can the colonies supply all our wheat?

### The Cereals

The most important food-stuffs are undoubtedly the cultivated grasses, such as wheat, oats, barley, rye, maize, millets, rice. These are known as *cereals*, and their cultivation is the main pursuit of the farmer or agriculturist in all lands. In some countries the chief food of the people is rice, in others millets, and in still others maize; but in Europe wheat is of far greater importance than the rest, and it is now one of the leading articles of the world's trade.

### Wheat

We have already said that wheat is one of the grasses. It must have been at one time a wild grass, but it has been in cultivation for so long that we cannot trace its origin now. Wheat was grown as a food-plant long before the beginning of recorded history. The flowers, as in all grasses, are very small, and arranged in little

groups called spikelets, which in wheat are pressed close to the stem so as to form compact spikes. In some of the many varieties the glumes which enclose the flowers have a long bristle or awn, and such wheats are said to be bearded.

Wheat is a crop of temperate climates, but it requires a fair degree of warmth and moisture. It cannot as a rule be grown as far north as oats, barley, and rye. The soils most suited to wheat are light clays and heavy loams, a loam being a soil composed of clay and sand. Some kinds are sown in autumn or early winter ("winter wheats"), others in spring ("spring wheats"). There is no month of the year without a wheat harvest in some country.

Wheat is the chief cereal for bread-making, though others are also used in many countries. Ordinary *white bread* is made from the flour obtained by separating the husk from the grain. The separated husks are known as *bran*, and are used for feeding stock, in calico-printing, and for other purposes. *Brown breads* or whole-meal breads are made from the whole grain, bran and flour together. The sponginess of bread is due to the action on the flour of *yeast*, a substance which consists of a great many tiny living plants.

### British Wheat

The area under wheat in Britain has been decreasing for many years. About thirty years ago it was 4 million acres; now it is less than half that area. Scotland and Ireland are of small importance as wheat-growing countries, but Scotland's yield per acre, 38 bushels, is much higher than that for the rest of the

kingdom. The principal wheat-growing counties of Scotland are Forfar, Fife, Haddington, Edinburgh, and Perth. England has a much larger wheat area than the sister kingdoms, the leading counties being Lincoln, Norfolk, Essex, Cambridge, and Suffolk, all in the east, as in the case of Scotland. Britain's average yield of wheat per acre, over 30 bushels, is greater than that of the rest of the world.

The United Kingdom grows about 55 million bushels of wheat each year, but to supply the needs of her population she has to import 200 million bushels, partly in the form of grain, partly in that of flour. Some 3 million bushels are exported, and thus the total annual consumption of wheat in the British Islands is about 252 million bushels, that is, about 6 bushels per head of the population.

### Foreign and Colonial Wheat

Of our total imports of wheat three-fifths come from foreign countries, and two-fifths from British possessions. The United States usually sends about two-fifths of the total, and large quantities come from Canada (one-fourth), the Argentine Republic, Australia, India, and New Zealand. Our wheat is imported partly as grain and partly as flour, the flour coming mostly from the United States and Canada; but most of our flour is milled at home from imported wheat.

Among British possessions India has the largest wheat area and crop, and India is now one of the leading wheat-growers of the world. About 30 million acres are under wheat in that country, principally in the Punjab, United Provinces, and Central Provinces. The total crop



is about 400 million bushels per year, more than enough to supply the whole of Britain's demand; but India's crop is precarious owing to climate, and by far the larger part of it is needed by her own teeming millions. Her export of wheat to Britain varies greatly from year to year, and at its highest it is only a small part of her produce of wheat. Her wheat-exporting seaports are Karachi and Bombay.

Canada has some 23 million acres under wheat, chiefly in Saskatchewan, Alberta, Manitoba, and Ontario. Her total annual yield is about 400 million bushels, of which she exports to Britain about one-fifth. The Commonwealth of Australia has over 9 million acres of wheat lands, chiefly in New South Wales, Victoria, and South Australia. Her annual crop is about 150 million bushels, and of this Britain receives about a quarter. New Zealand has only a small area under wheat, but her yield per acre is high, and thus she produces about 10 million bushels per year, but she can now export very little.

It is not easy to say whether the colonies can in time supply the whole of the British wheat-demand in addition to their own. India will always need her crop mostly for herself; Australia and New Zealand have not much opportunity for growth in this respect: but there is no doubt that Canada can greatly extend her production of wheat, is in fact doing so.

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## 46. Oats, Barley, Rye, Buckwheat

Oats a grass—Temperate crop—Wider range than wheat—Sown in spring  
—Oats as food—Cultivation of oats in Britain—Sources of imported  
oats—Origin of barley—Kinds of barley—Conditions of growth—Use

as bread—Malt—Cultivation in Britain—Sources of imported barley—Origin of rye—Hardness—Conditions of growth—Rye-bread—Use in Britain—Sources of import—Buckwheat not a grass—Easily grown—Not grown in Britain—Sources of import.

## Oats

Next to wheat the most valuable cereal in the British Islands is oats. Oats, like wheat, must have been at one time a wild grass, but it has been so long in cultivation that we cannot trace its whole history. The common weed known as the wild oat is not the original of the cultivated oat. The spikelets of oats are arranged on the stem in a loose, open panicle, instead of forming a close spike, as in wheat.

Oats, like wheat, are a crop of temperate climates, but they succeed best in countries whose climate is cooler and moister than that best suited for wheat. Consequently, they are more extensively grown than wheat in the moister and more northerly parts of Europe, but they are adapted to a wider range of soil and climate than wheat. Most kinds of oats are sown in spring.

In Scotland the meal obtained from oats is an important article of food in the forms of porridge and oatmeal cakes. Oats are regarded as the best of the cereals for feeding horses, and in England they are grown mostly for this purpose.

## Home and Imported Oats

The total area under oats in Great Britain is almost exactly the same as it was thirty years ago. The crop is grown on about 3 million acres in all. It is by far the

most important crop in Scotland, the acreage under oats being fully four times that under wheat and barley, while even in England it occupies a rather larger area than either wheat or barley. The principal oat-growing county of Great Britain is Aberdeen, and in England the chief oat-growing counties are York, Lincoln, and Devon. The average yield per acre in the United Kingdom is about 36 bushels, and on the whole Scotland gives a better yield than England.

We have seen that we import far more wheat than we grow; but in the case of oats we grow much more than we import. Our total annual crop of oats is about 115 million bushels, and we import less than 30 million bushels. Nearly all our imported oats come from foreign countries, chiefly the United States and Argentina. The only colony which sends us any considerable quantity of oats is Canada.

### Barley

The cultivated barleys are supposed to have been derived long ago from a wild species found in western Asia. The spikelets of barley form a close spike, as in wheat, and most of the varieties are bearded. In *six-rowed barley*, which is of little practical value, the ear has six rows of grain; in *bere* or *bigg* there are also six rows in reality, but there appear to be only four; but the common *two-rowed barleys* resemble wheat in having only two rows of grain in the ear.

Barley is adapted to a wider range of climate than either oats or wheat. It can be well grown in countries too cold for oats, and also in the warmer regions preferred by wheat. It succeeds best on light soils,

such as sandy or chalky loams. Barley is sown in spring.

Barley was the chief bread-corn of the ancient Hebrews, Greeks, and Romans, and it is still used in this way to some extent. Its principal use at the present day, however, is in brewing, but for this purpose it must first be changed into malt. *Malt* is simply barley which has been moistened and allowed to germinate, that is, to begin to grow.

### Home and Imported Barley

The area under barley in the United Kingdom has diminished during the last thirty years, but not so rapidly as the wheat area. It is now a little over  $1\frac{1}{2}$  million acres, being thus less than the area under wheat, and much less than that under oats. Lincoln, Yorkshire, Norfolk, and Suffolk are the principal barley-producing counties of England. Scotland produces much less barley than England, the chief counties being Forfar, Fife, and Aberdeen. The average yield per acre is about 30 bushels, but Scotland gives a larger yield.

The total annual produce of our native barley is about 50 million bushels and our annual import of barley amounts to about 23 million bushels. Practically all the imported barley comes from foreign countries, especially Denmark, Chile, Roumania, and the United States. Canada is the only colony which sends any important quantity.

### Rye

Rye is a cereal similar to wheat, and has been developed from a wild grass found in eastern Europe

and western Asia. It is extremely hardy, and can stand severe frost. It requires a light soil, especially a sandy one, and can be grown on soils too poor for any other grain. In Germany, Russia, and the Scandinavian countries rye is the chief bread-corn, being made into a black kind of bread. It is but little grown in Britain, and there it is chiefly used as green fodder for sheep and cows. The small amount of rye imported into the United Kingdom comes almost entirely from Canada and the United States.

### Buckwheat

Buckwheat is generally classed among the cereals, but it is not a grass. It belongs to the same group of plants as the docks and sorrels ("sourocks"). It can be grown on very poor soils with little trouble, but it is of small value and is not cultivated in this country. Our imports of it come chiefly from France, Russia, and Japan (including Formosa).

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## 47. Maize, Rice, Sago, &c.

Meaning of corn—Maize an American cereal—Maize a grass—Its flowers and fruit—Soil and climate required—Does not ripen in United Kingdom—Chief crop of United States—Maize as food-stuff—Corn-flour—Food of poor Irish peasants—Maize in Britain—Sources of import—Maize in the colonies—Importance of rice—Rice a grass—Soil required—Rice in India—British import of rice—Sago—Tapioca—Arrow-root—Millets—Beans—Peas.

### Maize or Indian Corn

When an Englishman speaks of corn, he means wheat; to a Scotchman corn is the common name for oats; but

a native of the United States means maize or Indian corn when he uses the simple word corn. Wheat, oats, barley, and the other cereals already mentioned were introduced into America from Europe, but maize was cultivated by the Indians of America long before they saw a European, and Europe obtained this grain from the New World.

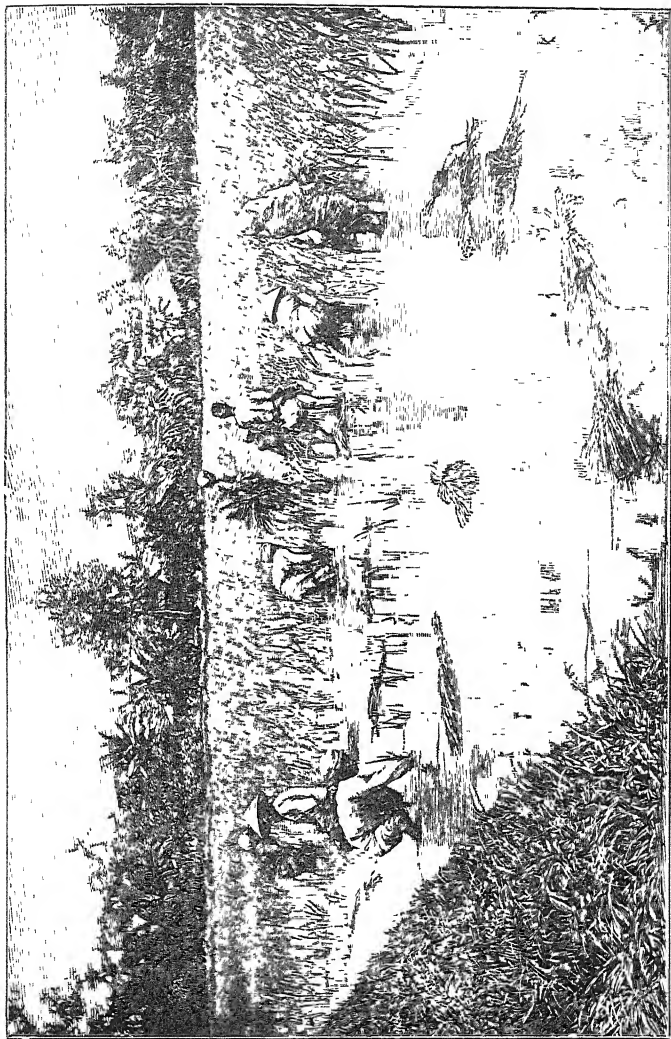
*Maize* is a grass, like the cereals already described, but it differs from them in having two kinds of flowers on the same plant. Only one of these types of flower produces the cob or fruit, which corresponds to the ear of oats or wheat. Maize requires a rather rich and well-drained soil, and it can be grown only in countries which enjoy a warm summer of fair length, with a moderate rainfall. It will not ripen in the United Kingdom, but it is the leading grain crop of the United States.

Maize is used for human food in several forms in the countries where it grows, but in Britain *corn-flour* is the best-known preparation from it. It is the staple bread-corn among the poorer Irish peasants. The bulk of the maize imported into Britain is used as food for stock.

### Import of Maize

We import about  $2\frac{1}{2}$  million tons of maize each year. Fully a third of it comes from the Argentine Republic, and nearly two-fifths are obtained from the United States. Canada sends a considerable though variable quantity; but we get practically none from any other colony save South Africa. Our import of maize-meal comes almost entirely from the United States.

There is a large area under maize in northern India but the crop is mostly consumed in the country. Maize



Labourets at Work in a Rice Field. (Rice forms the staple food of one-third of the human race chiefly Asiatic peoples)

is the leading grain crop of Queensland, and in New South Wales it is surpassed only by wheat. It is also the chief cereal cultivated in South Africa, being there called *mealies*; but Australia and South Africa are surpassed in this respect by the Canadian province of Ontario. The annual produce of maize in Canada is about 13 million bushels.

### Rice

*Rice* is one of the leading grain crops of tropical countries, and forms the main food of a larger part of the human race than any other grain. It is a grass, intermediate in general appearance between barley and oats. It can be cultivated only on very wet land, especially on land which is subject to regular floods.

Rice is the leading crop in certain parts of India, particularly in Burma and the lower valley of the Ganges. In Bengal there are two rice harvests each year, one reaped between July and September, and the other between November and January. There is only one rice harvest in Burma. Britain imports about 100 thousand tons of rice, rice-meal, and rice-flour each year. About half of it comes from the Indian Empire, though the United States, Siam, Spain, and Italy supply considerable quantities.

### Sago, &c.

*Sago* is made from the pith of a special kind of palm-tree which grows in the Malay Archipelago. It is exported to Britain and other countries by way of Singapore. *Tapioca* is prepared from the roots of the cassava plant, which belongs to the same group of plants as the box-tree and the castor-oil plant. It is cultivated



in the tropical parts of America and Africa. *Arrow-root* is a fine starch prepared from the underground stems of a West Indian plant closely related to the ginger plant. A large number of the people in India, Egypt, and elsewhere live principally on the grain of various grasses known as *millet*, but none of the millets is an important article of trade. *Beans* and *peas* are extensively cultivated in Britain, but nevertheless we import considerable quantities. Our imported beans come chiefly from the Netherlands, Belgium, Chile, and India, and our imported peas from Holland, Japan, China, India, New Zealand, and Canada.

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## 48. Dairy Produce

Britain's dairy produce—Need of importation—Sources and amount of imported butter—Margarine—Sources and amount of imported cheese—Margarine cheese—Imported milk—Condensed milk—Eggs—Honey.

### Britain's Home Produce

The produce of the dairy is more important in British farming than all the cereal crops together, but still we do not produce enough butter and cheese to supply the needs of our people. We have accordingly to import large quantities of butter and cheese from abroad.

### Imported Butter

Our annual imports of *butter* amount to about 220,000 tons. Fully more than a third of this comes from Denmark, where dairy-farming is very flourishing. The Argentine Republic, Finland, and Holland send us considerable quan-

ties, and also the colonies of Australia, Canada and New Zealand, whose exports of butter to Britain will probably increase. Various imitations of true butter have been made from animal fats. These are known as *margarine*, and must not be sold in Britain as genuine butter. Our import of margarine comes almost entirely from Holland, where the margarine industry has developed rapidly.

### Imported Cheese

Our colonies, New Zealand and Canada, do better as exporters of *cheese* than as exporters of butter. Indeed, Canada exports more cheese than any other country. We import altogether about 130 thousand tons of cheese each year, and of this amount New Zealand sends almost exactly one-half. Canada also exports a fair amount of cheese to Britain. The chief foreign countries from which we obtain cheese are the United States and Holland. We import a small quantity of *margarine cheese* from the United States.

### Milk, Eggs, Honey

Even *milk* is imported, mostly from France, but the amount is not large. A greater amount of *condensed milk* is annually obtained from abroad, chiefly from France, Switzerland, and Norway. The number of *eggs* imported into the United Kingdom reaches the enormous figure of more than 1600 million. Denmark sends us more than any other foreign country or than any colony, and the next chief exporters of eggs to Britain are the United States, Poland, Lithuania, and Belgium. Canada sends us 50 or 60 million eggs a year, but no other colony

is as yet of much importance in this respect. The imported eggs are not all used as food. Many of them are the source of valuable industrial products. We do not get much *honey* from abroad, but what we do import comes mostly from the British West Indies, Chili, and the United States.

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## 49. The Live-Stock Trade.

Animal products—Importance of the domestic animals—Oxen, sheep, pigs, horses—Numbers of animals in Britain—Stock in Australasia—In South Africa—In Canada—In India—Buffaloes—Live-stock trade with Ireland—British imports of cattle and sheep—Earlier sources—What made the change possible—Killing at port of landing—Imported horses.

### Domestic Animals

In the last chapter we considered various products of animal origin, namely, butter, cheese, milk, eggs, and honey. We must now devote some attention to the principal animals themselves, and the forms in which their flesh is utilized as food. Milk, butter, and cheese come directly or ultimately from the *cow*. *Sheep* do not now yield milk, butter, or cheese, but their flesh is a leading article of food. The flesh of the *pig* is also of great importance among food-stuffs. *Poultry* and *game* are less important sources of food-supply, but require some consideration.

Oxen, sheep, and pigs are primarily of importance as leading sources of food, but they also yield many valuable substances and articles not used as food. The hides, hoofs, horns, and other non-edible parts of oxen are all

turned to advantage; from sheep we get wool, one of our principal clothing materials; and pigs supply us with bristles and lard, besides their skins. The *horse* does not furnish us with food, but it is of immense value as a working animal.

### The Stock of the Empire

The number of cattle in Great Britain is about 7 million, to which it has fallen from  $12\frac{1}{2}$  million in 1919. The number of sheep, about 23 million, is slowly increasing at present, but the number of pigs, which is now about  $2\frac{1}{2}$  million, tends to diminish. The Australian Commonwealth has about 14 million cattle and 100 million sheep, Queensland leading in cattle and New South Wales in sheep. New Zealand has more than 3 million cattle and about 24 million sheep. Thus British Australasia has three times as many cattle as Britain, and about four times as many sheep. South Africa has a considerable number of sheep and cattle, but in both it is far surpassed by Australasia. Canada is not important in sheep-rearing, but it has a large number of cattle, and it is much ahead of the other colonies in the number of its pigs. India has more cattle than all the rest of the empire (150,000,000), but her sheep number only about 22 millions. Among Indian domestic animals the *buffalo* is of great value.

### The Trade in Live Stock

The Irish Free State sends to Great Britain considerable numbers of cattle, sheep, and pigs every year; and so also does Ulster. From abroad Britain imports yearly

a small number of cattle and a smaller number of sheep. These come mostly from the United States, but a growing number are sent by Canada. Half a century ago we imported our cattle and sheep from the continent of Europe, but now we get none from that source. The importation of live stock across thousands of miles of land and sea would have been impossible but for the immense development in the means of transport caused by the introduction of steam-power.

Imported cattle have to be killed where they are landed in order to prevent the introduction of disease among the home herds. Some British farmers were anxious to stop this killing of Canadian cattle, and a bill removing the embargo on these was passed in 1922.

We import horses from several countries, chiefly from the United States. Canada sent us a fair number a few years ago, but our import of horses from that colony has been declining.

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## 50. "Cold Storage"—what it is and what it does.

Bacon's anticipation of cold storage—Burying fruit—What cold storage is—Applied to meat, dairy produce, fruit—Dead meat may be brought long distances—A fairy tale—Refrigerating stores—Cold chambers on the ships—Cold storage at our ports.

### Meaning of "Cold Storage"

When the great philosopher Bacon left his carriage in the depth of winter to stuff a chicken with snow that it might "keep good" till it could be cooked, and when our grandmothers used to "bottle" their gooseberries and

plums and bury them in the ground in order that they might have fresh fruit at Christmas, they had invented what we now know as *cold storage*.

Cold storage is the present-day application of Bacon's snow, that is, of ice, to the preservation of animal and vegetable produce that can only be kept for any length of time at a very low temperature.

### Results of Cold Storage

We hear now about frozen meat, frozen poultry, game, eggs, and butter; we hear now even of the cold storage of fruit—apples, plums, and all sorts of fruits that would not keep beyond a limited period at the ordinary temperature.

At present it is possible to despatch to Britain, say, a thousand bullocks killed far away in the States or in Canada, or as many sheep killed in Australia or New Zealand, without fear of the carcasses going wrong on the journey.

It reads like a fairy tale. It is more than a fairy tale, for it is the veritable "Jack Frost" himself—the good-natured, mischievous imp he was always considered to be, coming and touching all these dead carcasses for us with his wand, and lo, they keep as fresh for months as when they were killed!

### How It Is Done

And this is the secret. As soon as our brethren over the seas find it necessary to kill their bullocks or sheep, although they have no markets at hand, they kill and immediately store the carcasses in *refrigerating stores*.

These are stores in which the carcasses are reduced to a low temperature, in which state they keep till they can be put on shipboard to be sent to their destination.

The ships, too, are fitted with chambers kept cold by means of ice or some artificial means of cooling. In these chambers the beef or mutton comes safely through tropical heat, through calm and storm, and we buy it in our shops as sirloins of American beef or legs of Australian mutton.

The system of cold storage has been introduced at several of our ports, and in them are stored game and fowls, butter and fruit, in fact nearly every kind of food-stuff that would spoil by keeping in the ordinary way. Australian butter is thus kept and put on the market, and so also Canadian apples and peaches, which, as a result, can be had in good condition at any time of the year.

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## 51. The Dead-Meat Trade

Meat comes chiefly in dead form—Growth of dead-meat trade—Reasons for the growth—Forms of dead meat—Amount and nature of imported meat—Sources of pig-meat—Sources of beef, mutton, rabbits, &c.—Home production of meat.

### Growth of the Trade

Our import of live cattle and sheep gives no idea of the extent to which we are dependent upon foreign countries and the colonies for our supply of meat, because we import it mostly as *dead meat* and not in the form of living animals. The dead-meat trade has grown rapidly in recent times for several reasons. It is

favoured by the rapidity of transit which is a leading feature of our civilization. Besides, it is more economical to import dead meat than living animals, since more can be got into the same space in the dead than in the living form. Finally, cold storage, of which we have already given an account, has made it possible to bring dead meat of any kind from practically any distance.

### Forms of Dead Meat

Our dead meat comes to us in various forms. These include: (1) *beef*, the flesh of cattle, either fresh or salted, or preserved otherwise than by salting; (2) *mutton*, the flesh of sheep, either fresh or preserved; (3) *pork*, the flesh of pigs, either fresh or salted; (4) *bacon*, the salted and smoked backs and sides of pigs; (5) *hams*, the salted and smoked thighs of pigs; (6) dead *rabbits*. To these we may add *poultry* and *game*, partly imported alive and partly in a dead form.

### Britain's Meat Supply

The total amount of dead meat annually imported into this country, excluding poultry and game, is over a million tons. About two-fifths of it represents the various forms of pig-meat, especially bacon. Beef accounts for more than a quarter, most of it coming in the fresh form. About a fifth of the total is mutton, almost all fresh. Of dead rabbits we import only about 12 thousand tons.

Bacon and hams come to us principally from the United States, which sends nearly one-half of our total import of these forms of meat. In bacon Denmark



comes second and Canada third, but in hams Canada is second. We get our fresh pork mostly from Holland; and very little from the United States. Our salted pork, other than bacon and hams, comes mostly from Denmark and the United States.

The Argentine Republic and that of Uruguay between them supply all but a very small proportion of our import of beef. The bulk of the remainder is supplied by the colonies of New Zealand, Queensland, New South Wales, Victoria, and Canada. In fresh mutton New Zealand is our chief supplier, with about one half of the total. The Argentine Republic comes next, and after it the Commonwealth of Australia and Holland. Dead rabbits are sent chiefly by Australia and New Zealand. Our imports of poultry and game come mainly from the continent of Europe and the United States, and are valued at about a million pounds a year.

Our home production of all forms of meat is very large and apparently increasing. Indeed, the decline in corn-growing in Britain has been largely made up for by the development of dairying and the production of meat.

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## 52. Fish and Fisheries

Importance of fisheries, especially British—Early fishermen—British fishermen—The herring-fishery—Other home fish—Newfoundland—Cod-fishing—Canadian fisheries—Kinds of Canadian fish—Tinned salmon—British Columbian salmon.

### British Fisheries

The harvest of the sea is as important to many as the harvest of the land is to us all. And particularly to the

British Isles are the products of the sea important. It should be so, since our home territory consists of sea-girt islands, which give us, with their great indentations, a vast extent of coast in comparison with their size, and the surrounding seas, being shallow, are the home of vast multitudes of edible fish.

The world's first heroes were probably fishermen, who launched out upon the deep in dug-out tree trunks, not at first to make voyages, but to catch fish. And the old habit has come down strongly impressed upon Britain's sons, who are not only daring and expert fishermen around the home shores, but venture into the remotest parts of the great oceans, in order to secure the harvest of the waters wherever it can be found.

They go towards the North and the South Pole for whales, to the extreme of North America and Northern Europe for seals, to Labrador and Newfoundland for the great cod-fishing. Wherever there is a profitable ingathering to be made, and wherever Britons have a right to intrude with their ships or their fishing-smacks, there British fishermen are to be found.

### Herrings, &c.

Away in the North Sea—say between Wick in the north and Sunderland towards the south—some three thousand fishing-boats are engaged during the season of the *herring-fishing*. These boats, which venture many miles from land, employ more than twenty thousand hands, and a number almost equal to this are engaged in selling, distributing, curing, and exporting the “catches” on the shores.

In one of the worst herring years nearly 400,000

barrels of that fish were cured; but in a good season many times that quantity is landed, the largest half of which is exported to Europe or to our colonies. And besides herring, as we know, there are many other kinds of valuable fish, such as cod, ling, haddock, soles, halibut, turbot, mackerel, pilchard, sprats, brill, whiting, hake, plaice, &c.

### British North American Fisheries

Newfoundland to-day has a population of only a little over 250,000, although it is a much larger island than Ireland. But in the fishing season this population is enormously increased. *Cod* and *cod-liver oil* are the great export of the hardy fishers of the banks of Newfoundland.

In the great Dominion of Canada the fisheries, if we take marine and inland together, are among the most extensive and important in the world. Canada has a magnificent coast-line along the Pacific and along the Atlantic; and with this vast coast-line must be reckoned the fishing-ground of the great lakes, which are themselves inland seas, and the magnificent rivers of the Dominion.

*Cod* is the principal marine fish of the Dominion, others being herring, haddock, mackerel, hake, and halibut. The *dog-fish* yields a fine machine oil. The *seal-fishing* on the Pacific shores is important, as providing skins for the beautiful warm sealskin jackets sold by our fur-dealers.

Trout, salmon, and other fresh-water fishes are caught in immense numbers. For many years past we have seen in the provision merchants' windows stocks of

*tinned salmon* from Canada, and most of that comes from British Columbia.

Though salmon of from 50 to 70 lbs. have been occasionally, but very rarely, caught in the Tay and other



Unloading Salmon at a Cannery, New Westminster, B C

(The morning's catch, 10,000)

British rivers, in Canadian waters they may reach 80 lbs. in weight; and so prolific is that splendid food-fish in North America, that in Vancouver Island, and along the rivers of the Pacific shore, salmon are, or have been, used as manure for the land. It has even been asserted that the paddle-wheels of steamers on some of the British Columbia rivers have been stopped by becoming "clogged" with salmon.

## 53. Fruit.—I

Increasing importance of fruit—New methods of preparation—More careful cultivation—Area of supply extended—Fruit cheaper—Britain's home-grown and imported fruit—Area of orchards and market-gardens—Chief fruit districts in Britain—Chief home rosaceous fruits—Gooseberries and currants—Imported fruits.

### Increasing Importance of Fruit

The cereals and the various forms of flesh, including fish, constitute the principal food-stuffs of the civilized world, but fruits and vegetables are of great and increasing importance in this regard. It is said that the consumption of fruit in the United Kingdom has more than doubled during the last quarter of a century, although the increase in population has been only about one-third. New methods of preparing fruit for the market have been introduced in recent times, and much greater attention is now bestowed on its cultivation. The area from which the world draws its supply of fruit has also extended rapidly by the introduction of fruit-culture into new countries. These improvements and developments have greatly lowered the price of fruit, and so increased the consumption.

### Our Orchards and Market-Gardens

Britain grows a considerable quantity of fruit, but she imports many thousand tons. Much of the imported fruit belongs to kinds that cannot be grown in Britain, except under special conditions, but a large part of it is of sorts that we grow ourselves, though in insufficient quantity. The total area covered by orchards in Great

Britain is about 250 thousand acres, all but a few thousand acres being in England. There are, besides, about 80 thousand acres of market-gardens growing small fruit, such as raspberries, gooseberries, currants and strawberries; and of this area, too, all but 7 thousand acres are in England. The total area under orchards and small fruit is thus about 330 thousand acres.

The counties with the largest orchard areas are Kent, Hereford, Devon, Worcester, Somerset, and Gloucester. Kent easily leads in small fruit. In Scotland the chief orchard and small-fruit districts are the Clyde valley, in Lanarkshire, and eastern Perthshire. In Scotland the area under small fruit is much larger than the orchard area, but in England the reverse is the case.

### Native Fruits

Our most important native fruits belong to the same order of plants as the roses. The *apple* is the most valuable of them all, and can be grown profitably over a larger part of the country than any other. The cultivated apples have all been derived from the crab-apple, which is found growing wild in Britain and other countries. The *pear*, another but less valuable native fruit of the rose group, had its origin in the wild pear of our woods. The *plum*, *damson*, and *bullace* are cultivated forms of another wild rosaceous fruit. The damson is a small oval kind of plum, and the bullace differs from it in being spherical and white. Other rosaceous fruits grown in Britain are: *peaches* and *nectarines*, of Chinese origin; *apricots*, derived from a wild plant of Northern China and the neighbouring lands; *cherries*, which are merely improved forms of the wild cherry and the gean,

both natives of Britain. *raspberries* and *strawberries*, both of which in their wild form are abundant in Britain.

Of native fruits not belonging to the rose group *gooseberries* and *currants* are of greatest value. These are members of a family of plants closely related to the rose family, and containing the beautiful saxifrages which grow on the rocks and mountain-slopes of Britain and other lands. There are three varieties of currants, red, white, and black.

### Foreign Fruits

The most important fruits of which our supply comes almost entirely from abroad are almonds, figs, oranges, lemons, limes, citrons, melons, grapes, chestnuts, walnuts, bananas, and pine-apples. The *almond* is the fruit of a rosaceous tree belonging to the warmer parts of temperate Asia, and the *chestnut* is produced by a tree found wild in the countries around the Mediterranean. The chestnut belongs to the same group of plants as the hazel, which produces the well-known *hazel-nuts*, and among the other members of the group are our great forest trees, the oak, beech, and birch. The *walnut* is the fruit of a tree whose native land is Persia and Asia Minor. The *orange*, *lemon*, *lime*, and *citron* are all members of the rue group of plants, and the *grape* is the fruit of the grape-vine, which is extensively grown on the European continent and in other lands. The *fig-tree* is a near relative of the lowly nettle and the stately elm-tree, and the *melon* is obtained from a plant of the same family as the *cucumber*, *pumpkins*, and *squashes*. The *banana* is one of the finest of tropical fruits, and the *pine-apple* is a valuable product of tropical America.

## 54. Fruit—II

Britain's import of raw fruit—Oranges—Orange-like fruits—Apples—Bananas—Pears—Plums—Cherries—Grapes—Almonds—Other fruits—Improved modes of preservation—Advantages of preservation—Jams and jellies—Marmalade—Chutnies—Crystallizing and glazing—Bottling—Evaporation—Cider and perry—Canning—Currants—Figs—Dried plums and prunes—Raisins—Fruit industry in the colonies.

### Our Imported Fruit

The amount of raw fruit imported yearly into the United Kingdom is now over 800 thousand tons, and its total value is about 30 million pounds sterling. *Oranges* form usually the largest item in this total, and more than nine-tenths of our oranges come from Spain. The names of the Spanish towns of Valencia and Seville are specially associated with varieties of oranges in the market. The name of Jaffa in Palestine has been given to a well-known superior kind of orange from that country. Italy and Portugal also send us a fair number of oranges, but among British possessions only the West Indies need to be mentioned in this connection. Of the fruits closely allied to the orange, namely, *lemons*, *limes*, and *citrons*, Italy sends nearly the whole, and Spain is the only other country with any important quantity.

Our import of *apples* is much smaller than that of oranges. Canada, Western Australia, and Tasmania, and the United States are our chief suppliers, but we also get a considerable quantity from Belgium, Holland, and France. The principal sources of our supply of *bananas* are Costa Rica and the Canary Islands, but we import a large quantity from the British West Indian Islands. Bananas have become a popular fruit



in Britain only in quite recent years, and the trade in them is still increasing.

We do not import *pears* in very large quantity, but what we do import comes mostly from France, Belgium, and the United States. Our home supply of *plums* is supplemented from France and other countries of the Continent. France is also the chief source of our foreign *cherries*, and our raw *grapes* come almost entirely from Spain and Portugal. We get *almonds* chiefly from Spain, Italy, Morocco, and France; other kinds of nut fruits from France, Spain, Ceylon, Brazil, and the British West Indies. Our *dates* are obtained mostly from Iraq, India, Persia, and North Africa.

### Preservation of Fruit

The increasing consumption of raw fruit has been accompanied by an increasing demand for preserved fruit of various kinds, and the methods of preservation have been greatly improved in recent years. Preservation makes fruit available for home use or for sale during a longer period, and in seasons of unusually abundant crops it is a convenient method of dealing with the surplus produce. Many forms of fruit which would be unsaleable in the raw state can be made into excellent preserves.

There are several methods of preservation in actual use. Some fruits can be treated equally well in more than one way, but others are well adapted to only one method. The manufacture of *jams* and *jellies* is the best-known mode of preservation, and the one chiefly carried out in Britain. Marmalade is made mostly from oranges. *Chutnies* can be made from apples or toma-

toes by boiling with garlic, spices, and similar substances. Some fruits are soaked in a thick syrup made from fine white sugar, and then dipped into a hot syrup and afterwards dried. This process, known as *crystallizing* or *glazing*, is used mostly for green-gages (a variety of plums), apricots, cherries, small pears, and small apples.

The *bottling* of fruits is best adapted to plums, gooseberries, damsons, cherries, and currants. *Evaporation* or drying by passing hot air through and over the fruit is a very important process of preservation in some foreign countries, and is specially suited to apples and plums. The manufacture of *cider* and *perry* from apples and pears respectively is receiving greater care and attention now than formerly. The *canning* of fruit is an industry of some note in western America and elsewhere.

A considerable part of our imported fruit comes to us in a preserved form. We get *currants*, or small dried grapes, almost entirely from Greece, and indeed the very name currant is corrupted from that of the Greek town of Corinth. This kind of currant is entirely different from those already mentioned as grown at home. Our *figs* reach us in a preserved form from Asiatic Turkey and Portugal chiefly; the United States and France send us *dried plums* and *prunes*; and our *raisins*, which are merely dried grapes, are imported almost entirely from Spain and Asiatic Turkey.

### Fruit in the Colonies

In several of our colonies the fruit industry is making steady progress. The orange crop of New South Wales is already of some importance, and in Tasmania

fruit-growing and fruit-preserving are well advanced. South Africa grows many useful fruits well, and in Canada millions of bushels of apples are now obtained yearly from native trees. There is a probability of great progress in this direction for all these colonies.

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## 55. Vegetables

Meaning of word "vegetable"—Green crops and corn crops—Green crops in the United Kingdom—Turnips—Potatoes—Imported potatoes—Imported onions—Tomatoes—History of the potato—Affinities of the potato—History and affinities of the onion—The cabbage group of vegetables.

### The word "Vegetable"

The word vegetable is used in several rather different senses. It comes from a Latin word meaning "to enliven or invigorate", and in its widest meaning it is applied to plants of every kind. Thus we speak of the vegetable kingdom as distinguished from the animal and mineral kingdoms of nature. More commonly, we limit the word to certain food-plants, such as potatoes, onions, tomatoes, beet-root, cabbage, and cauliflower, which are distinguished from plants not used as food, and also from the cereals and fruits. In agriculture, potatoes, turnips, beet and mangold, cabbage, vetches, and similar crops are called *green crops*, whilst the cereals, together with beans and peas, are called *corn crops*.

### British Green Crops

The area under green crops in Great Britain has been slowly decreasing for many years, and is now

about 3 million acres, or rather less than half the area under corn crops. Turnips are grown on rather more than 1 million acres, and potatoes on less than  $\frac{1}{2}$  million, the rest being occupied by cabbage, rape, mangold, vetches, and other similar plants. In Ireland potatoes are more important than turnips, but in Great Britain turnips are by far the most important green crop.

### Imported Vegetables

Although we raise large quantities of potatoes in our own country, we have nevertheless to import a considerable amount each year to meet the needs of our people. Our imported potatoes come mainly from France, Holland, and the Canary Islands. We also get a large amount of onions from abroad, especially from Spain, Holland, and Egypt. The *tomato* is the fruit of a South American plant of the same family as the potato. It has become a favourite article of food in recent years, and our imports of tomatoes are now considerable, although we grow large quantities at home under glass. Our imported tomatoes come mostly from the Canary Islands, Spain, and France. The Channel Islands send large supplies of potatoes and tomatoes to Britain.

### Potatoes

The *potato* is not a native of Europe. It was introduced into Europe from South America in the sixteenth century, but it did not become important as an article of food in Europe till the eighteenth. The part of the plant used as food is the swollen underground stem or

tuber, which is also the principal source of starch in this country. The potato is a member of a family of plants which includes tobacco and one of the most poisonous of our wild flowers, namely, deadly nightshade.

### Other Vegetables

The *onion* probably came to us from the East, but it has been in cultivation for thousands of years, and so it is difficult now to trace its origin. It belongs to the same group of plants as the lily and wild hyacinth. The *cabbage*, *cauliflower*, *Brussels sprouts*, *kohl-rabi*, and *broccoli* are all cultivated and improved forms of the wild cabbage of our sea cliffs. They belong to the same family of plants as wallflower and shepherd's purse, and are very closely related to the *turnip*, the *Swedish turnip*, the *rape* or *colesseed*, and the *mustards*.

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## 56. Tea, Coffee, Cocoa

What tea is—The tea plant—Where tea can be profitably grown—Mode of preparation—Green and black teas—Varieties of tea—History of tea—Wild tea in Assam—Tea cultivation in India—Tea cultivation in Ceylon—Tea in Natal and other colonies—Increase of tea consumption—Tea-drinking nations—Sources of our imported tea—Amount imported—What coffee is—Conditions of growth—Affinities of the plant—Liberian coffee—Coffee imports—Their source—Coffee in the colonies—Chicory—Cocoa a food—What cocoa is—Chocolate—Cocoa-butter—British cocoa industry—Cocoa imports—Their source—Imports of manufactured cocoa.

### Tea

Tea is made from the leaves of a shrub or small tree which grows wild in parts of northern India and southern

China. This plant is closely related to the camellias, which we cultivate in greenhouses for their flowers. It can be grown with success in any tropical or sub-tropical country with a considerable rainfall distributed fairly evenly over the whole year, but the manufacture of tea cannot be profitably carried on except in countries, such as India, where labour is abundant and cheap.

The leaves of the plant, after being carefully gathered, are rolled, dried, and otherwise treated. *Green teas* and *black teas* may be made from the same plant by a slightly different mode of manufacture. The principal varieties of green tea are *hyson*, *gunpowder*, and *imperial*, and the chief black kinds are *pekoe*, *congou*, *souchong*, *bohea*, and *caper*.

The tea plant has been cultivated in China for many centuries, possibly from a date before the beginning of the Christian era. It was introduced into Japan in the ninth century of our era, but tea did not become known in Europe till the sixteenth century. Small quantities were brought to Britain early in the seventeenth century, but for long the price was high and it was but little used by the bulk of the people.

### Tea in India and Ceylon

Wild tea plants were found growing in Assam, in northern India, early in last century, and shortly before the middle of the century the cultivation of tea was begun in that country. There are now more than half a million acres under tea in British India, principally in Eastern Bengal and Assam. The cultivation of tea began in Ceylon about 1879, when the coffee plants were being destroyed by disease, and now Ceylon is one of

the chief tea-producing countries of the world. Her tea area is about 400 thousand acres. More recently tea has been introduced as a crop into other British colonies, especially Natal, which has now about four thousand acres devoted to it.

The price of tea is now so low as to place it within the reach of all, and in consequence the total consumption of it has increased enormously. Outside the countries where tea is made, the chief tea-drinking peoples are the Anglo-Saxon nations, namely, Britain and her colonies and the United States. The Australians are the chief tea-consuming nation of the world. Next to the British and American peoples, but a long way behind, come the Russians and the Dutch.

In the sixties of last century we imported nearly all our tea from China and only a small quantity from India, and at that time Ceylon had not yet begun to grow tea. At the present time we get by far the larger part of our tea from India and Ceylon and very little from China. The total amount of tea imported into Britain is now over 400 million pounds' weight. Of this India sends more than one-half, Ceylon more than a third, and China less than a fifteenth.

### Coffee

Coffee is made from the seeds of a shrub or tree which grows wild in Arabia, Abyssinia, and some other countries. It requires a warm and rather moist climate. The coffee plant belongs to the same family of plants as the common goose-grass and woodruff of our hedgerows and woods. It is now cultivated in many countries where it is not native, and several substitutes for it have

been introduced. *Liberian coffee* is a hardier but less valuable variety found in West Africa, and now planted elsewhere.

We import about 28 thousand tons of raw coffee every year, besides a small quantity of roasted and ground coffee. Our supplies come chiefly from India, Brazil, Costa Rica, Central America, and East Africa. Coffee culture is steadily extending in the West Indies, and it has been introduced into Ceylon, Queensland, Natal, and other British colonies.

The principal coffee substitute is *chicory*, which is made from the roots of a British wild plant of the daisy family. It is sold separately, and also mixed with true coffee. We import a fair amount of chicory from the continent of Europe.

### Cocoa

Tea and coffee act as stimulants and have little or no nutritive value, but cocoa (or cacao) is an excellent food. Cocoa is prepared from the seeds of a shrub which is found wild in tropical America, and is now cultivated in many parts of the Old World. *Chocolate* is one of the chief preparations from cocoa, and a sort of solid oil called *cocoa butter* is made from the seeds for use in various industries. The manufacture of cocoa, like that of coffee, is a growing industry in Britain.

We import over 130 million pounds' weight of raw cocoa every year. Nearly three-quarters of this comes from West Africa (mainly the Gold Coast), and we get a lot from Ceylon and British West Indies. We also import considerable quantities from Ecuador, Brazil, and other South American countries, and from Portugal and



Portuguese West Africa. Holland, Switzerland, and France send us large amounts of manufactured cocoa.

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## 57. Sugar

Sugars—Sucrose—Sugar-cane—Preparation of sugar—Sugar-beet—Napoleon's influence—Other sources of sugar—Sugar-refining—Molasses and treacle—Syrup—Rum—British imports of sugar—Their sources—Sugar in West Indies—Sugar in Mauritius—Sugar in British Guiana—Sugar in India.

### Sources of Sugar

The chemist gives the name sugar to a large number of substances, but the only one of great practical importance is *sucrose*, the sugar derived from the sugar-cane and some other plants. The *sugar-cane* is a very tall grass, which is not now found wild in any part of the world. It seems to have been first cultivated in the East Indies, but it is now widely distributed throughout the tropical regions of the world.

The sugar is prepared from the pith of the sugar-cane. The juice is expressed from the cane by means of rollers, clarified or freed from impurities, filtered, and then concentrated by boiling. More sugar is now made from the root of the *sugar-beet* than from the pith of the sugar-cane. The sugar-beet is closely related to several rather inconspicuous British wild flowers, and is merely another form of the mangold or mangel-wurzel, which is cultivated in England as a food for cattle. The great Napoleon gave the first real stimulus to the beet-sugar industry, and it is still chiefly carried on in the countries

of the European mainland. The *sugar-maple*, some kinds of *millet*, and even *maize* are also used as sources of sugar in America and elsewhere.

The raw sugar is refined before being put on the market, and the refining industry is of some importance in Britain. Refining is absolutely necessary with beet sugar, and since beet sugar came into prominence all sugars are refined. The uncrystallized product obtained in making sugar is called *molasses*, and a similar substance produced in the process of refining is known as *treacle*. *Syrups* are sugary solutions from which sugar can be obtained in the form of crystals. *Rum* is an intoxicating liquor distilled from the juice of the sugar-cane.

### Sugar Imports

Britain imports each year about 500,000 tons of refined sugar, and about 1,500,000 tons of raw or unrefined sugar. The refined sugar comes almost entirely from the European continent. Of the raw sugar imported about half a million tons are beet sugar, and this comes mostly from Germany, Belgium, Holland, Austria, and France. Of about 200,000 tons of raw cane-sugar imported we get most from Cuba, Brazil, Peru, Java, British West Indies, India, and Mauritius.

### Sugar in the Colonies

The cultivation of sugar-cane is carried on more or less in nearly all the British West India islands, and in some of them, such as Barbados, sugar is the chief agricultural product. In others, for example Grenada and Trinidad, sugar is secondary to other crops, such as

cocoa, and in Jamaica coffee and bananas each occupy a larger area than the cane.

Sugar is the principal crop and export of the island of Mauritius. Almost the whole of the cultivated area of British Guiana is devoted to the growth of sugar-cane. India has more than  $2\frac{1}{2}$  million acres under the sugar-cane, but she has to import large quantities of sugar from Mauritius and elsewhere.

## 58. Tobacco, Drugs, Spices, &c.

What tobacco is—Native countries of tobacco—Smoking—James I—Conditions of growth of plant—Tobacco-growing in the United Kingdom—Forms of tobacco—Smoking habit—Smoking injurious to juveniles—Imports of raw tobacco—Imported cigars—What opium is—Where cultivated—Uses of opium—Preparations of opium—Import of opium—Peruvian bark—Where cultivated—Its affinities—Its uses—Quinine—Imports of bark—Liquorice—Cinnamon—Camphor—Ginger—Black and white pepper—Cayenne pepper—Jamaica pepper—Nutmegs—Cloves.

### Tobacco

*Tobacco* is manufactured from the dried leaves of several similar plants of the same family as the potato, tomato, and deadly nightshade. The chief of these plants are natives of America, though now extensively grown in other lands, but one variety of tobacco plant is a native of Persia. Smoking was introduced into Europe from America soon after Columbus's voyages, but for long the habit was discouraged. James I of England wrote a work against it, and in some European countries smoking was severely punished.

The tobacco plants are properly tropical plants, but

they can be easily cultivated on suitable soil in temperate lands. Tobacco-growing was carried on in England in spite of government prohibition till near the end of the eighteenth century, and it was not stopped in Ireland for some decades later. It has often been proposed to reintroduce it as a means of improving the condition of the farming industry.

Tobacco is of many different varieties, and is prepared in several ways. The *cigar*, *cheroot*, and *cigarette* are familiar forms. *Snuff* is now made wholly from the stalks and ribs of the leaves, and not from the leaf-material proper. The smoking habit appears to be becoming commoner amongst all civilized peoples. Whatever may be thought of smoking by adults, there cannot be any doubt that smoking is a cause of serious physical and moral injury to young people.

We import annually nearly 200 million pounds' weight of unmanufactured tobacco to be worked up by our home manufacturers. Eight-ninths of this comes from the United States: and Holland, Turkey, and Germany send us fair quantities. The only British colonies sending any appreciable quantities of tobacco are Rhodesia and the West Indies. Our import of cigars amounts to over 1 million pounds' weight per year, and comes principally from Cuba and the Philippine Islands. India, Holland, and Belgium also send us moderate quantities of cigars.

### Opium

*Opium* is the dried juice of the unripe capsule of a kind of poppy very like the wild poppies of Britain. It is cultivated in India, China, Persia, and other countries,

but in British India its cultivation is regulated by the government and limited to certain districts. Opium is useful to the physician as a drug, but many in China and other countries eat it and smoke it, usually with very harmful results. *Laudanum* is the best-known form of opium. *Morphia* is prepared from it, and *chlorodyne* is made from morphia, chloroform, and other substances. Our imported opium comes mostly from Turkey and Bengal.

### Quinine

*Peruvian bark* is obtained from several kinds of cinchona-trees found wild in the tropical valleys of the Andes mountains in South America, and now cultivated in India, Java, and elsewhere. It belongs to the same group of plants as goose-grass, woodruff, and coffee. The bark is of great value in medicine, especially in the treatment of fevers, and the best-known preparation from it is *quinine*. Our imports of the bark are obtained mostly from Java, India, Ceylon, and Peru.

### Liquorice

*Liquorice* is another valuable medicine imported into Britain, mostly from Italy, Asiatic Turkey, and Russia. It is obtained from the roots of a plant of the same family as our common peas and beans. The plant grows wild in southern Europe and a large part of Asia, and it is now cultivated to a considerable extent.

### Spices

The principal spices are cinnamon, ginger, and pepper. *Cinnamon* is made from the inner aromatic bark of a

tree of the same family as the laurel. It is a native of Ceylon and other parts of tropical Asia, but it is now cultivated in the West Indies and other countries where it is not native. By far the larger part of our imported cinnamon comes from Ceylon. Common *camphor* is got from a tree closely related to the cinnamon-tree.

*Ginger* is the substance of the underground stems of an East Indian plant of the same family as arrow-root. It is now cultivated in West Africa, the West Indies, and most tropical countries. Britain gets her ginger mostly from India, the West Indies, and Sierra Leone. *Black pepper* consists of the fruits of a climbing East Indian shrub, and the milder *white pepper* is prepared from the seeds by removing the skin. Nearly all our pepper comes from the East Indies, but we get some, from Zanzibar and West Africa. *Cayenne pepper* is got from a plant of the potato family. *Jamaica pepper*, *all-spice*, or *pimento* is the dried fruit of a West Indian tree of the myrtle family.

*Nutmegs* are the kernels of the fruits of a tree which was once confined to the Malay Archipelago, but is now cultivated in other countries. *Cloves* are the dried flower-buds of a tree of the myrtle family. This tree is a native of the Malay Archipelago, but it is now cultivated in other tropical regions, notably in Zanzibar.

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## 59. Liquors

Fermentation—Yeast—Wines—Wine-making—Cream of tartar—Diastase—Mashing—Boiling with hops—Fermentation—Kinds of beer—Distillation—Whisky and gin—Brandy—Rum—Liqueurs and cordials—

Aerated waters—Kinds of aerated waters—The liquor industry in Britain—Imported wines—Colonial wines—Imported spirits and beer—Exports of beer and spirits.

## Fermentation

Fermentation is the chief process in the manufacture of wines and spirits, but it is too complicated to be fully explained here. It consists essentially in the change of sugars into alcohol, and this change is effected by the action of yeast or some other ferment. *Yeast* is simply a mass of very minute living plants, which can be made out only under the microscope.

## Wine-making

*Wines* are made from the juice of grapes by fermentation. The ripe grapes are picked and then crushed, either by treading with the bare feet or by means of rollers. In this way the juice or must is extracted. No yeast or special ferment needs to be added, because the wine-ferment is present in the air of wine-producing districts and on the grapes themselves. The fermentation takes place in two stages, the first, lasting from one to three weeks, being called the active fermentation, and the second, lasting for months, being known as the still fermentation. During the still fermentation a deposit called *argol* forms on the liquid; this is the source of *cream of tartar*. After fermentation the wine is left to “ripen” and become purer and better flavoured; this takes two or three years. Wines are also made by fermenting the juices of other fruits than grapes.

## Brewing

When barley is allowed to germinate, a substance called *diastase* is formed in it; and when diastase is present in greatest quantity the barley is known as *malt*. The brewer mixes malt and unmalted grain at the proper temperature and under the proper conditions. The result of this process, known as mashing, is that the diastase of the malt converts the starch of the grain into a sugar ready for fermentation.

The wort, or liquor produced by mashing, is run into a copper, where it is boiled with hops. The hops give a bitter flavour, and the boiling drives off excessive water and removes other substances which are not required in the finished product. The boiled liquid is then fermented with yeast, after which it is ready for bottling or barrelling. *Ale*, *porter*, *stout*, and *lager beer* are special varieties of beer differing in colour, proportion of alcohol, and other respects.

## Spirits

The manufacture of spirits does not differ much from that of beer up to the completion of the fermentation, but after fermentation the alcohol is separated from the other substances by distillation. The mixture is heated in a still, and the alcohol passes over as a vapour, to be condensed in a copper worm. *Whisky* and *gin* are well-known intoxicating liquors made from grain by fermentation and distillation. *Brandy* is made by distilling wines, and *rum* is prepared from fermented molasses. *Liqueurs* and *cordials* are strong alcoholic



beverages made from grain alcohol by the addition of flavouring essences.

### Aerated Waters

The effervescence of *aerated waters* is due to the escape of carbonic-acid gas, which has been forced into them under great pressure. The differences in appearance and taste are due to the different substances added to the simple aerated water. *Soda* and *potash water*, *lemonade*, *ginger-beer* and *kola* are the best known of aerated waters.

### British Imports and Manufacture

Britain is not a wine-producing country, but she manufactures large quantities of beer, spirits, and aerated waters. Her import of wines of all kinds is about 17 million gallons a year, valued at 6 million pounds. Four-fifths of this comes from France, Spain, Portugal, and Germany, the chief wine-producing countries of Europe. Australia and South Africa send us a fair quantity of wine, but their wine industry is still in its infancy.

Our imported rum comes mostly from British Guiana and the West Indies; and we get a large quantity of brandy from France. Our gin comes chiefly from Holland, where the gin industry is flourishing. Our import of beer is not very large. We export considerable quantities of beer and spirits to various foreign countries and British possessions.

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## 60. Coal—I

Special position of coal in our trade—Coal of vegetable origin—How formed—Wood, peat, lignite, coal—Anthracite—Welsh steam-coal—Bituminous coal—Gas-coal—Destructive distillation of coal—Coal-gas and coke—Coal-tar—Products of coal-tar—Carbolic acid, creosote, aniline and other dyes, pitch, &c.

### Nature of Coal

We have passed in review all the most important food-stuffs and other commodities conveniently classified along with them. We must next learn something of the chief raw materials which appear in our trade returns. In practically all raw materials, as in food-stuffs, we import much more than we export, the only notable exception being coal. Our import of coal is very small, but our export of it is very large.

Coal is classed with the minerals, but it is of vegetable origin. The decayed vegetation of a very remote age, long before the earth had its present appearance and became inhabited by man, has been changed into coal by the pressure of the rocks above it. *Carbon*, the substance of diamonds and the lead of pencils, constitutes about 50 per cent of the weight of *wood*. In the *peat* of bogs it amounts to 60 per cent; in *lignite* or *brown coal*, which is imperfectly mineralized, the proportion is about 66 per cent; in *coal* the percentage of carbon varies from 80 to well over 90.

### Kinds of Coal

Those varieties of coal in which the percentage of carbon is very high are known as *anthracite*. They

are used principally in smelting metallic ores and in the generation of steam. They do not kindle readily, but give out great heat in proportion to bulk; and this latter property makes them specially valuable for use in ships, where space is limited. The well-known *steam coal* of South Wales is of this kind. The coal in ordinary household use has a lower percentage of carbon, and is known as *bituminous*. It gives more light than anthracite when burned. Several varieties of it have special names in particular districts. One of them, *cannel* or *parrot coal*, is the chief variety used in making coal-gas, whence its other name, *gas-coal*.

### Coal Products

Coal is principally, but not only, used as fuel. From it many valuable substances can be manufactured. If it be strongly heated in closed retorts, it gives off a mixture of gases forming the well-known *coal-gas*, and the substance left behind in the retorts, known as *coke*, may be used as fuel for furnaces or for other purposes. This process of decomposing coal is called destructive distillation. A ton of good gas-coal will yield 10,000 cubic feet of ordinary coal-gas and 1400 pounds of coke.

In making coal-gas, a black, oily liquid rather heavier than water is obtained as a by-product. This is called *coal-tar*, and 120 pounds of it are got from each ton of coal distilled. Formerly the tar was regarded as a waste product, but last century it was discovered that several very useful substances can be made from it. It is subjected to a second distillation, and among the substances thus obtained, either directly or indirectly, are *naphtha*,

used for dissolving rubber and resins; *carbolic acid* a valuable antiseptic, but extremely poisonous; *naphthalene*, a solid crystalline body which may be used for some purposes in place of camphor, and which in turn produces other valuable substances; *creosote*, widely used for preserving timber; a large number of valuable dyes, including the *aniline* and *alizarine* dyes; and *pitch*, the substance left after distillation, used for paving and other purposes.

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## 61. Coal—II

Importance of coal in British industry—Coal in relation to iron—Britain's output of coal—Output of the Empire—World's output—Britain's export of coal—Where it goes—Cardiff and the Tyne ports—Place of exported coal in our foreign trade—Coal-fields of the United Kingdom—Will our coal give out?—Coal in the colonies—Coaling-stations—Some of the more important named.

### Value of Coal to Britain

Many things have contributed to Britain's progress as a manufacturing nation, but none is more important than her great natural wealth in coal and iron. Without an abundant supply of these minerals she could not have made use of the great inventions which more than a century ago placed her far ahead of other nations in manufacturing industry.

The coal is no less valuable than the iron. It is found in close proximity to the iron, and the iron ores are smelted by its aid. By means of coal the smelted iron is made into engines and all sorts of machinery, and the engines and machinery require coal to work and drive them. The ships which carry on our immense

trade need coal to propel them. Our coal-fields are in some ways more valuable than our wheat-fields.

### World's Output of Coal

Every year we raise in the United Kingdom about 250 million tons of coal. Our colonies and possessions produce, in addition, more than 30 million tons, so that the total amount of coal annually raised in the British Empire is about 280 million tons. The output of all foreign countries taken together is about 835 million tons, of which about half is the produce of the United States. Thus the total coal production of the world is about 1115 million tons per year, and Britain is far ahead of every other country in this respect, except the United States.

### Britain's Export of Coal

Britain exports over 60 million tons of coal each year, that is, about a fourth of her total output of the mineral. This is taken mostly by France, Germany, Italy, Sweden, Russia, Egypt, Denmark, Spain, Norway, and Holland. Among British possessions Cape Colony and Malta take more of our exported coal than any others. Cardiff is the chief coal-shipping port of the kingdom, and after it come the Tyne ports.

Coal is the only raw material exported by Britain in any really large quantity, but it is of great importance. Our export of coal is about four-fifths of the total weight of all our exports. It is the chief outward freight of the ships which bring back food for our people and materials for our industries. If these ships had not coal to take out in their holds, they could not carry on trade

as profitably as they do. Besides, were it not for the outward cargo of coal, the food and raw materials which they bring back would cost us more.

### Coal in Great Britain

Ulster contributes a very small amount to the coal output of the United Kingdom. Ballycastle and Coal Island are the only coal-fields. England leads with more than two-thirds of the total output, chiefly from the counties of Durham, Northumberland, York, Lancashire, Derby, Stafford, Monmouth, and Nottingham, with smaller quantities from Warwick, Leicester, Cumberland, Gloucester, Somerset, Worcester, Shropshire, and Chester. Wales and Scotland produce about the same total quantity. Glamorgan is by far the most important coal-producing county of Wales, Denbigh and Carmarthen being next in order. Lanarkshire yields more than half the total output for Scotland, Fife, Ayr, Stirling, and Linlithgow being next in importance. Some have feared that our supplies of coal will become exhausted in a comparatively short time, but it is now certain that we have enough for several hundred years yet, without taking into account new sources, such as the coal which is known to lie deep down in Kent.

### Coal in the Colonies

Several of the British possessions have great deposits of coal, and already produce large quantities every year. Australia's output, mostly from New South Wales and Tasmania, is about 11 million tons, and New Zealand raises about 2 million tons a year. India mines about

23 million tons of coal per annum, and Canada's present annual production is about 16 million tons. British South Africa raises about 11 million tons per year. A fair quantity is also produced by British Borneo. Several of these colonies will become increasingly important as producers of coal.

In order to supply the needs of her navy and her immense mercantile fleet, Britain has to furnish with coal a number of coaling-stations on the great high-ways of ocean trade. On the Suez Canal route to the East the coaling-stations are Gibraltar, Malta, Aden, Bombay, Colombo, Trincomalee, Singapore, and Hong-Kong. On the ocean route there are Freetown, St. Helena, Cape Town, Mauritius, and others; and there are also coaling-stations in the West Indies, North America, and other parts of the world.

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## 62. Iron and Steel—I

Importance of iron and steel—Iron an element—Not used pure—What steel is—The carbon a necessary constituent—Native iron—Oxides and carbonates—Magnetic oxide—Red hematite—Brown hematite—Forms of the carbonate—Pig-iron—The work of the blast-furnace—Puddling—Wrought-iron—Steel—Cementation—Blister steel—Cruible steel—Bessemer steel—Siemens steel.

### What Iron and Steel are

The most important of all metals are iron and steel, and these are the basis of some of the most important of British industries. Iron is one of the sixty or seventy simple substances known to the chemist as elements, but the iron of everyday use contains small quantities of

other elements, such as carbon and phosphorus. Steel also consists of the element iron, with a little carbon and traces of other elements. These other elements, both in iron and in steel, are not all impurities. The carbon is needed to give them the qualities which make them of practical value.

### Occurrence of Iron

Iron is occasionally, though very rarely, found native, but various compounds of it with other elements are widely distributed in the earth's crust. The most important of these are the compounds with oxygen, the chief gas in the air, and those with both carbon and oxygen. The oxygen compounds are called *oxides*, and the compounds with carbon and oxygen, *carbonates*. The richest oxide is the *magnetic oxide*, which abounds in Sweden. *Red hematite* is another oxide which occurs in several forms, and is worked in Cumberland. *Brown hematite* differs from the red kind in having water combined with it. It occurs in great abundance in northern Spain, and also in parts of England. The carbonate of iron is found in nature in several forms. Its purest form is *spathic iron ore*, and other varieties are the *Cleveland ironstone* of northern Yorkshire and the *blackband ironstone* of Scotland and Staffordshire.

### Pig-iron

The manufacture of iron and steel from the raw ores is an elaborate process, but its main features can be easily indicated. *Pig-iron* is made from the ore by smelting in the blast-furnace. The mixture introduced



into the furnace before the smelting begins consists of iron ore, limestone, and fuel. The fuel may be either coke or a mixture of coke and coal. The mixture is exposed to intense heat, and a blast of air is drawn through the furnace. The result of the smelting is to produce a crude form of iron; slag, formed by the combination of the lime with certain impurities in the ore, and waste gases. The iron thus obtained is run into sand moulds, and so cast into "pigs" weighing about a hundredweight each.

### Wrought-iron and Steel

Pig-iron has too much carbon to make it of practical use, and it also contains other impurities. Part of the carbon and as much as possible of the other impurities must be removed, and this is now effected by the process known as *puddling*. Puddling is carried out in a special kind of furnace. The finished product of the puddling process is called *wrought-iron*.

*Steel* contains less carbon than cast or pig iron, but more than wrought-iron, and it is also practically free from the impurities of pig-iron. It is manufactured by making wrought-iron take up a quantity of carbon. This process is called *cementation*, and is carried out in a furnace in which the iron is heated in contact with charcoal. The result of cementation is to produce *blister steel*, so called from its appearance, but to obtain the best steel this must be melted down in crucibles and cast.

In 1856 the late Sir Henry Bessemer introduced a new process of making steel. It consists essentially in burning out the excess of carbon in pig-iron, and produces a *mild steel*, which is now largely used in place of

wrought-iron. The Bessemer process has found an important rival in the *Siemens* or *open-hearth process*, in which the reduction of the proportion of carbon in pig-iron is secured by the addition of more iron.

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## 63. Iron and Steel—II

British production of iron ore—The chief districts—The production of pig-iron—United States and Germany—The Empire's iron resources—Britain's imported ore increasing—Sources of the imported ore—Imported pig-iron—Exports of ore and pig-iron.

### Britain's Iron Ore

Great Britain produces annually from 4 to 12 or more million tons of iron ore. About two-fifths of this comes from mines in the Cleveland district of north Yorkshire; the iron-producing district of Leicester, Lincoln, and Northampton yields nearly a third, and Cumberland and Lancashire produce together about one-eighth. Staffordshire and Scotland also yield considerable quantities of iron ore. Ayr, Lanark, and Renfrew are the chief iron-mining counties of Scotland. Ireland's yield of iron ore is small, and comes wholly from Antrim. The richest of the ores is that worked in Cumberland and Lancashire.

Britain's output of pig-iron in the best year between 1911 and 1920 was over 10 million tons. The rest of the British Empire produced between 1 and 2 million tons, while other countries yielded over 70 million tons. Thus the world's total production of iron is over 80 million tons. Britain is now surpassed in respect of the produc-

tion of iron by the United States. The production of the United States is about four times that of Britain.

The resources of the British Empire in iron are probably very great, but they are as yet almost untouched, except in Britain itself. Newfoundland leads at present in production of pig-iron, and next to her comes Canada, which can almost certainly produce much more than she does. India and Australia also produce a little iron.

### Imported Ore

Britain's production of iron ore has been, on the whole, slightly decreasing since about 1880, and she is importing more and more iron ore from abroad. The amount imported is now about 6 million tons, of which over a third is brought from Spain. Greece, Algeria, Italy, and Sweden also supply fair amounts. The only British colony sending us any considerable quantity of iron ore is Newfoundland, but we also import from New South Wales and Canada. We import a little pig-iron from Sweden, Canada, the United States, and elsewhere.

Our export of ore is small, but of pig-iron we export over a million tons a year, chiefly to the United States, Germany, and Italy.

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## 64. Manufactured Iron— Machinery, &c.

Great variety of forms of manufactured iron—Enumeration of several kinds—Wide use of British iron work and machinery—Railways and steamships—Boilers and engines—Textile machinery—Bridges—Ship plates, masts, &c.—War-ships and their guns—Other nations also

manufacture these things—Case of United States—Exports to our colonies—Importance of our exports of machinery.

### Variety of Manufactured Iron Goods

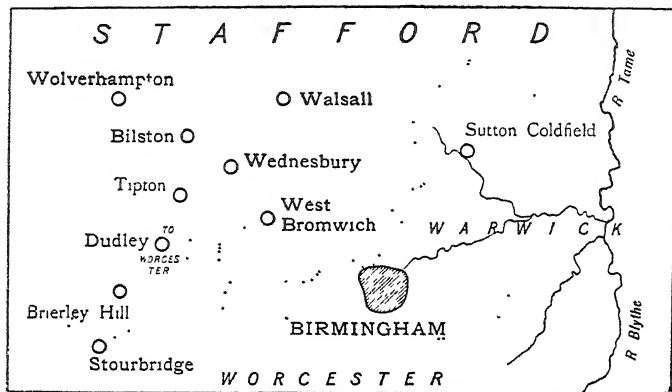
It is well-nigh impossible even to mention the great variety of forms in which manufactured iron goods are exported from Great Britain. There is angle and bolt and rod iron, iron and steel rails, iron chairs for the rails, and iron and steel in many other forms for railway purposes. There is galvanized sheet-iron for agricultural and factory and other buildings, cast-iron and wrought-iron, iron wire, pipes and tubes, stoves, fenders, fire-irons, agricultural tools, and a thousand other things.

There is the great trade in iron and steel plates for boilers and for ships, and finally magnificent machinery, from the gigantic engines for the great ocean liners, the locomotives of our railways, the driving-engines of our factories, to the myriads of gas-engines and the millions of sewing and smaller machines which are turned out in the course of a year.

### British Machinery

All these things are being turned out from the mother-country in endless streams. British railway engines, for instance, are to a greater or less extent running upon all the world's railways outside the United States, just as her steam-ship engines are possessed by every marine trading nation, and are the driving-power of nineteen-twentieths of the steam-ships on every sea. Her boilers and engines and spinning and weaving machinery are found in every manufacturing country, nay, in every manufacturing city, of the five great continents. Britain's

agricultural implements are at work in almost unheard-of places in the world, just as her sewing-machines, with Birmingham hardware and Sheffield cutlery, may be found in the wigwam of the North-American Indian, in



The Black Country

the hut of the African and New Zealand chief, or the Chinese mandarin's dwelling.

Her iron bridges, of boldest designs and marvellous proportions, span the rivers and chasms of Europe, of Egypt, of India, China, and Japan, of North and South America, of Southern Africa, of Australia and New Zealand.

The iron ships of the world are largely coated with plates of British iron and steel; and, not excepting the navies of the United States and other foreign countries, our great rivals now in the iron industry, they carry their light steel masts and their hollow wrought-iron yard-arms, all from the same source—the Briton's exhaustless workshops.

And even terrible war-ships, with their heavy iron and steel walls, ships that may be turned against us some day, are sent out of little Britain to the American States, to France, Germany, Russia, Italy, Japan, and other nations. Many of their guns, of awful power, but of exquisite workmanship and skilled design, are produced at the great Armstrong Works on the Tyne.

### Foreign Iron Industries

These things are still being sent out from British shores in un-reduced numbers; but the demand for all these things is so great at the present time that other nations are manufacturing engines for steam-ships, locomotives, and all the other machinery which can be mentioned.

The demand, for instance, for iron goods in the United States is so great, that though that country produces more iron than Great Britain it does not export more than one-tenth as much. Indeed, for its ships and railway engines, its bridges, its textile, agricultural, and other machines, it uses almost all its own output and still imports much from Britain. We also send large quantities of machinery to our dependencies and colonial possessions, especially India, Canada, Australia, and New Zealand.

### Importance of Machinery Exports

We have already learned that this export of machinery, like that of other manufactured goods, is one way of paying for the food and raw materials we get from other lands. It should now be noticed that a great part

of the exported machinery goes to other countries to assist in preparing the food-stuffs and materials, and in carrying them to the ports for shipment. Thus in paying for our needful imports we are helping to keep up the supply.

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## 65. Gold and Silver

The precious metals—Barter—Need of money—Gold the British standard of value—Gold coins—Token money—Alluvial gold—Deep leads—Quartz-mining—Mining methods—Gold in Britain—Its output—World's output—Gold in the Empire—United States as gold producer—Silver—World's output—Output of the Empire—Silver in the United Kingdom—United States and Mexico—South America—Natural occurrence of silver—Extraction of silver—Imports of gold and silver ore, bullion, and specie.

### Precious Metals

Gold and silver are called the “precious metals”, not because they are the most valuable metals for manufacturing purposes, or because they are the rarest metals, but because they are used as money by all civilized nations. In rude states of society trade is carried on by barter. A person exchanges some commodities he does not need for others which he wants, and among barbarous peoples with few wants and a simple society this system works well enough. More advanced peoples require a more convenient system, and accordingly we find metals, especially gold and silver, used as money even in very early times. We have already seen that international trade is only a more elaborate form of barter.

### Legal Tender

Till the beginning of the Great War gold was the standard of value in Britain, and payments could always be made in gold, no matter how large the amount was. This is otherwise expressed by saying that gold was *legal tender* to any amount. As a war measure gold was called in and Treasury notes of the value of the sovereign and half-sovereign were issued and made *legal tender*. Ordinary small payments are made in silver and bronze coins, but these are not unlimited legal tender. For payments above forty shillings silver may be refused, and bronze coins need not be accepted for amounts above twelve pence. Silver and bronze coins are in Britain merely *token money*; that is, they are really of smaller value than they profess to be, and are accepted for small amounts on the authority of the government which issues them. Thus the silver in twenty shillings is less in value than the gold in a sovereign.

### Gold

Gold is found naturally in an uncombined or metallic form in many countries. *Alluvial* or *placer* gold is the gold which is obtained from the gravel and sand of present or former stream beds. This is the easiest kind to work, and the early diggings in California, Australia, and other gold-producing countries were limited to it. Similar deposits of gold are found buried at considerable depths; these are known as *deep leads*. At present, however, most gold is got from *veins* in quartz rock, and the working of these is often costly and difficult.

The separation of alluvial gold from the gravel and



other substances associated with it is effected by placing the mixture in a stream of water. The heavy gold sinks and the lighter materials are washed off by the running water. Quartz veins must be crushed in stamp batteries with a series of falling hammers before the gold can be separated from the rock.

### Output of Gold

The total annual output of fine gold for the whole world is about  $1\frac{1}{2}$  million pounds weight. Roughly two-thirds of this amount is the produce of the British Empire. The Transvaal and Australia are the chief gold-producing colonies of the empire, and Canada, India, New Zealand, Rhodesia, the Gold Coast, and British Guiana are also important in this respect. Among foreign countries the United States is by far the most important as a producer of gold. Its gold production is about one-sixth of the world's total production or one-fourth of that of the British Empire.

Since 1915 there has been a considerable decrease in the quantity of gold produced annually in the world, a decrease amounting to no less than about one-fourth.

### Silver

Silver is a more abundant metal than gold. The amount of it obtained in a year throughout the world is nearly 18 million pounds weight. The British Empire produces rather more than a tenth of the whole, the chief silver-yielding colonies being New South Wales, Canada, and Burma. Even the United Kingdom has its native supplies of silver, but in Britain it is always found mixed with gold and lead. The United

States and Mexico are far ahead of all other countries in the production of silver, and next in order come some of the countries of South America (notably Peru and Bolivia), Germany, and Japan.

Like gold, silver is too soft to be used for coining in the pure state, and it is therefore mixed with a little copper for this purpose. Silver occurs in nature in the free or uncombined state, and also in combination with sulphur and other elements. Several totally different methods are adopted for extracting it from its ores, and there are also ingenious processes for recovering the small proportions of silver often found in gold and lead ores.

### Gold and Silver Imports

Britain imports gold ore to the value of more than half a million pounds sterling, mostly from Western Australia and other Australian colonies. She also imports a considerable quantity of *gold-leaf*, that is, gold hammered out into very thin sheets. The gold-leaf comes almost entirely from Belgium. Our imports of gold *bullion*, that is, uncoined metallic gold, are valued at about 40 million pounds a year, and come mostly from South Africa and other British colonies. We also import gold coin or *specie* to the value of about 10 million pounds annually. Our imports of silver bullion are valued at more than 10 million pounds a year, the greater part coming from the United States. We also get a certain amount of silver coin or *specie* from abroad. The total value of gold and silver imported annually into Britain is about 50 million pounds sterling.

## 66. Copper

Early use of copper—Its great usefulness—Its alloys—Brass—Bronze—Other alloys—Natural occurrence of copper—Extraction of copper—Britain's ore production—Britain's smelting industry—Imported ore and regulus—Sources of import—World's output of copper—British colonies as copper-producers—Cyprus and the name "copper"—United States' copper production.

### Importance of Copper

Copper appears to have been used by man before any other metal, and it is still one of the most useful of the metals, being second in this respect only to iron and steel. It is extensively employed for making stills, boilers, various cooking utensils, pipes, nails, and numerous other articles of a similar nature; and it is the material used by the practical electrician for his conducting wires. Thin plates of copper are best suited to the requirements of the engraver and the etcher.

Not only is the simple metal used in a great variety of ways, but several alloys of it are amongst the most familiar of metals. *Brass* is an alloy of copper and zinc, generally consisting of two parts of the former to one of the latter. *Bronze* is an alloy of copper and tin, in which the copper greatly exceeds the tin in quantity. It is the material of our less valuable token coins. There are numerous other alloys of copper and tin, such as *gun-metal* and *bell-metal*, some of them containing also traces of zinc and lead. *German silver* is composed of copper, zinc, and nickel.

## Occurrence and Extraction of Copper

Copper is found native, but only in small quantity. Its chief ores are compounds with various other elements. The richest of them is *cuprite*, a compound with oxygen, but the most important in practice is *copper pyrites*, in which copper is associated with iron and sulphur. *Malachite*, a carbonate of copper, is also worthy of mention.

The process of extracting copper from pyrites involves many operations, but the main principles are simple enough. The pyrites is first heated in a furnace, or *calcined* as it is called, so as to burn off much of the sulphur and other impurities. The product is then heated with certain substances which carry off much of the iron as a slag, leaving a *regulus* consisting of copper, iron, and sulphur in combination. Other heatings follow, and in a final roasting the sulphur is all driven off, leaving metallic copper in an impure form. The copper is then purified so as to prepare it for the market.

## Britain's Copper Industry

Britain now produces less than 200 tons of copper ore a year, but fifty years ago she produced 80,000 tons. The greater part of this was mined in Cornwall and Devon, but Anglesey and other counties of North Wales also produced a little. Scotland has no deposits of copper, but in the Irish Free State Cork yields a little ore.

The copper-smelting industry is important in South Wales, especially in Swansea, but its supplies of ore come mostly from abroad. Our annual import of copper

ore and regulus amounts to about 150,000 tons. The ore comes chiefly from Cape Colony, Chili, Peru, and Newfoundland, and the regulus, or partly-smelted copper, mostly from Spain and the United States.

### World's Output

The world's average total output of metallic copper is of recent years fully a million tons a year, and of this the British Empire at present yields a tenth. In production of copper Australia is our chief colony. Next to it stand Canada and Cape Colony, both of which have great possibilities of development in this respect. Newfoundland is the only other colony of importance as a copper-producer. Cyprus, which produced much copper in ancient times and gave its name to the metal, now yields very little. The United States is by far the most important copper-producing country of the world, with about one-half of the total production.

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## 67. Tin, Lead, Zinc, and other Metals

Usefulness of tin—Cheaper than copper—Tin goods—Tin-foil—Tin-plate—Cornish mines—Imports of tin—Straits Settlements and Tasmania—United States and tin-plate—Nickel—Used for plating—Nickel steel—Nickel coins—Sources of nickel—Lead—Imported lead ore—Exported lead goods—Zinc—British sources and imports—Brass—Zinc sheeting—Galvanized iron—Mercury—Thermometers and barometers—Mercury in gold and silver extraction—Amalgams—Source of mercury—Aluminium—Natural occurrence—Increasing use.

### Tin

*Tin* is hardly second to copper in usefulness, and has the advantage of being cheaper. It is of everyday use

in the form of tin mugs for drinking, tin pails, tin cans for preserved meats, biscuit-boxes, and a multitude of other useful articles.

These things are not made of pure tin, which indeed is not greatly used except for *tin-foil*, but from what is called *tin-plate*. Tin-plate is really thin sheet-iron dipped in molten tin. Britain used to export tin from the mines of Cornwall, and these mines are still the richest European sources of tin; but now she imports large quantities. The chief imported supply is from the Straits Settlements, whose mines now provide half of all that is annually consumed in the world. Tasmania also sends us tin ore, and a certain amount comes from other parts of Australia, as well as from Nigeria.

Britain used to find in the United States a large customer for tin-plate, but of recent years the people of the States have begun to make tin-plate for themselves, and there is no longer that market for the wares of our tin-plate makers. They have, however, almost made up the loss by finding new markets for their goods. We have already mentioned several alloys of copper and tin. *Pewter*, used for various cheap articles, is an alloy of tin and lead.

### Nickel

*Nickel*, a white hard metal, has of late become of considerable importance. It is largely used as a plating for iron and other metals, to keep them from corroding. Every bicycle has its handle-bars, if not also its spoking, nickel-plated. With steel it makes a very hard alloy, now much used for armour-plating for the vessels of the navy. Many countries use nickel in making small coins.

Nickel is not found in Britain. Our supply is imported largely from Canada and the United States.

### Lead and Zinc

*Lead* is another metal which Britain no longer produces in sufficient amount for her needs. We import much ore from Spain, Rhodesia, Australia, and elsewhere, and we export lead piping and other forms of manufactured lead.

*Zinc* is got from Wales and Cumberland and the Isle of Man; besides, we import zinc ore from Australia, Belgium, Norway, and elsewhere. As we have read under copper, it alloys with copper to make brass. In the form of zinc sheeting for lining cisterns, &c., it is much used and exported. Zinc is used, too, in making *galvanized iron*, which is really iron with a thin coating of zinc. In this form it is much used for roofing. We have all seen temporary buildings roofed with this material. In the South African colonies roofs of galvanized iron are very much in use.

### Mercury and Aluminium

*Mercury* or *quicksilver* is a liquid metal of a silvery lustre and of great weight. It is used in thermometers and barometers for indicating the temperature and pressure of the air, and it is of great use in separating gold and silver from their ores. It combines readily with other metals to form alloys known as *amalgams*. Mercury is not found in the United Kingdom, and we get almost all our supplies of it from Italy and Spain.

*Aluminium* is widely distributed in nature, but it

does not occur in the free state. It is a constituent of several natural gems, of clay, and of many common rocks. The metal is very light and of a bright lustre, and is now coming into use for many purposes.

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## 68. Other Minerals

Asbestos—Use—Plumbago—Uses—Sulphur—Its forms—Sulphides—Uses of sulphur—Sulphuric acid—Gunpowder—Nitre—Cubic nitre—Uses of the nitrates—Borax—Uses—Sources—Asphalt—Uses—Petroleum—How obtained—Refining—Products—Scottish bituminous shales.

### Asbestos

*Asbestos* is a fibrous variety of a kind of rock called hornblende, which is composed of a great many substances. It occurs in the United Kingdom and on the continent of Europe, but the best kind is obtained in Canada, from which Britain gets most of her imported asbestos. Asbestos is incombustible, and is therefore much used in making fireproof materials.

### Graphite

*Plumbago*, *graphite*, and *black-lead* are different names for the same substance, which is one variety of the principal element, carbon, in diamonds and coal. It is found in many countries in larger or smaller quantities, but Britain gets her supplies mostly from the island of Ceylon. It is used chiefly in making lead pencils, but there are numerous other uses for it in the arts.



## Sulphur

*Sulphur* is one of the most important of the non-metallic elements, and is well known in various forms, such as *brimstone* and *flowers of sulphur*. It occurs in nature in the free state around volcanoes, and it is also found combined with metals, forming substances known as *sulphides*. Britain imports sulphur mostly from the volcanic districts of Italy. Sulphur is one of the substances used in making gunpowder, and it is also used in medicine. Its most important compound is *sulphuric acid* or *oil of vitriol*, which is manufactured on a large scale for use in preparing many other valuable chemicals.

## Nitre

Gunpowder consists of charcoal, sulphur, and nitre or saltpetre. *Nitre* is found saturating the soil in parts of India, Persia, and some other countries, and much nitre is obtained from this source. Much more, however, is made from *cubic nitre* or *Chili saltpetre*, a similar substance found encrusting the soil of northern Chili. Saltpetre is extensively used in making fireworks and explosives, in match-making, in curing meat, and in other industrial processes. Cubic nitre is used as a manure.

## Borax

*Borax* is a white crystalline solid which is found native in Tibet, Ceylon, California, and other countries. It is of great value to the practical worker in metals and to the practical chemist, and it is extensively employed in making enamels and glazes for metal goods and

pottery. It is also mixed with starch, and it forms an ingredient in some soaps. Meat may be preserved by means of it, and the dyer finds it useful. Britain imports borax chiefly from Chili and Peru.

### Asphalt

*Asphalt* or mineral pitch is found in abundance in the pitch lake of Trinidad, and also in other parts of the American continent. It is used in many ways, as a varnish, a paint, a waterproofing material, and especially as a paving material.

### Mineral Oil

*Petroleum* is a valuable mineral oil found at considerable depths below the surface of the earth in the United States, Mexico, Russia, Dutch East Indies, Persia, Burma, and other countries. It is reached by boring wells, often of great depth. The crude oil is subjected to an elaborate refining process so as to yield several products of great industrial value. Among these are *naphtha*, a liquid widely used for several purposes; *kerosene*, a valuable illuminating oil; *vaseline*, a viscid substance of great value to the physician; various lubricating oils; and *paraffin*. Similar products are obtained in Scotland from certain kinds of rocks known as bituminous shales.

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## 69. Cotton—I

Importance of the textile raw materials—Spinning and weaving—Textile industries—Cotton industry our chief manufacturing industry—What cotton is—Where the plant grows—Picking and ginning—Sea-island cotton—Spindle and distaff—Spinning-wheel—Hargreaves' spinning-jenny—Arkwright and Crompton—Effect of the inventions—Factory system—Cartwright's loom—Industrial Revolution—Effects of the revolution—Factory Acts.

### Textile Industries

The raw materials hitherto considered have been metals and other minerals, and we have seen that several of them are of the utmost importance in our industry and trade. Of no less importance, possibly more important in some ways, are the raw materials of our clothing, namely, cotton, wool, linen, and silk. Two of these, wool and silk, are of animal origin, and the other two are produced by plants. In each case we import all or most of the raw material required for our factories. In the spinning-mills the natural fibre is prepared, twisted, and spun into yarn, which consists of several strands of the fibre worked together like the strands of a rope. The yarn is the weaver's raw material, and is woven by him into cloths of various kinds. The spinning and weaving industries are known as *textile industries*, and their finished products as *textile goods*. The cotton industry is our greatest single manufacturing industry.

### Raw Cotton

Cotton in its natural state is a woolly material attached to the seeds of several closely related plants of the same family as our mallows and hollyhocks. They are more

or less shrubby, and grow in tropical and sub-tropical countries where the summer is long and warm, with a moderate but not excessive rainfall. The species have a wide natural distribution. In India one variety has been grown for more centuries than can now be known, and the ancient Egyptians were also familiar with cotton. Other kinds were found growing in America, both on the mainland and on the islands, by the early explorers of the fifteenth century.

The cottony attachment of the seeds is exposed when the pod or fruit bursts open, and soon afterwards the seeds and cotton are ready for picking. The cotton must next be separated from the seeds. This was formerly done by hand, but the process was slow and laborious. It is now effected by means of machines called *gins*, of which there are several kinds. Different varieties of cultivated cotton produce fibres of different lengths and quality. One of the best of all kinds is the long-stapled variety called *sea-island cotton*, which is grown along the coast of Georgia in the United States.

### The Cotton Industry

The earliest method of cotton-spinning was by means of a spindle and distaff. The *distaff* was for holding the fibre to be spun, and the *spindle* received the partly twisted yarn and completed the twist by its rotation. The spindle and distaff were superseded at an unknown date by the more useful *spinning-wheel*, but no further improvements of importance were made till the latter part of the eighteenth century. Hargreaves' *spinning-jenny*, patented in 1770, enabled several yarns to be spun at one time, and soon afterwards Arkwright and

Crompton brought out their spinning machines. The effect of these inventions on the cotton industry was revolutionary. Domestic spinning rapidly gave way to factory spinning, and the great Lancashire cotton-manufacturing cities began to grow rapidly.

The improvements in spinning caused the production of yarn to far outstrip the weaver's power of making it into cloth, but this was righted by Cartwright's invention of the *power-loom* in 1785. These improvements in spinning and weaving laid the foundation of Britain's supremacy as a cotton-manufacturing nation, and they are among the most important of the changes which brought about the Industrial Revolution. This revolution is proving itself really beneficial, but for a time it caused great hardship to thousands of work-people, especially women and children. Hours of labour were cruelly long, wages were very low, and the conditions of labour were often exceedingly bad, but the worst features have been changed by a series of acts of parliament, the Factory Acts and the Industrial Welfare Acts.

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## 70. Cotton—II

Raw cotton chief import after grain—Cotton goods our chief export—Growth of the cotton industry—Sources of Britain's cotton supply—Volume of cotton goods exported—Markets for British yarns—Kinds of piece-goods—Markets for British piece-goods—Exported cotton thread—Imported piece-goods—Importance of the cotton manufacture—Chief seat—Cotton manufacture in India—Egypt's cotton.

### Raw Cotton Imports

Next to grain and flour, raw cotton is the most valuable of all imports into the United Kingdom; and in the

list of British exports cotton yarn and cloths are easily first in respect of total value.

The amount of raw cotton imported into Britain at different periods gives a rough measure of the growth of our manufacturing industries. In 1820 we imported 152 million pounds' weight; by 1850 the amount had more than quadrupled; and in the next ten years the 1850 amount was more than doubled. The total quantity imported annually is now over 1800 million pounds, or about twelve times the quantity imported in 1820.

During the latter part of the eighteenth century Britain got nearly three-quarters of her raw cotton from the British West Indies. About a fifth came from the Mediterranean countries, and a considerable amount from Brazil. To-day the United States sends us about three-fifths of our total import of raw cotton. Egypt comes next with about a fifth of the total. The British East Indies and Brazil also send us fair quantities of cotton. Our import from the British West Indies is now trifling, but British East Africa and the Sudan have an annually increasing production and export. The great bulk of our imported cotton comes in the raw form, but we also import yarn, especially from Germany.

### Exported Cotton Goods

The total annual value of our exported cotton manufactures, including yarn, is about 200 million pounds. The weight of yarn sent abroad each year is over 160 million pounds. Of cotton piece-goods we export no less than  $3\frac{1}{2}$  million miles per year; that is, enough to go right round the earth one hundred and forty times. The rest of the exported cotton manufactures

consist of thread, lace, hosiery, and others of less importance.

The greater part of our exported cotton yarn is sent abroad in the gray form, but some of it is first bleached and dyed. The chief market for our *gray yarns* is the European continent, especially Germany and Holland, but British India takes a large quantity. The Turkish Empire, Japan, Egypt, China, the United States, and Canada are also good customers of our cotton-spinners for this class of goods. More than half of our export of *bleached and dyed yarn* goes to the British East Indies, and next in importance are Turkey, Roumania, and Egypt.

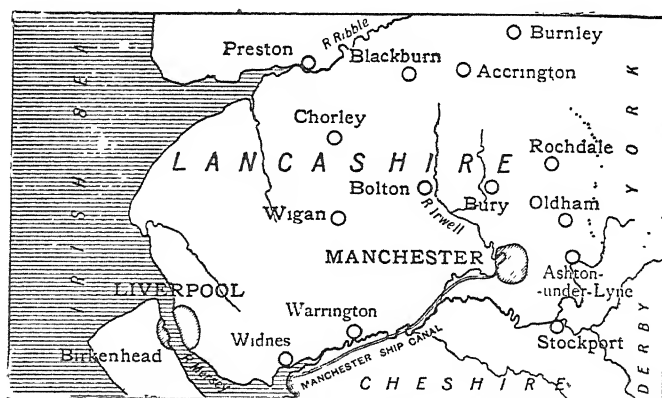
### Piece-goods

Cotton piece-goods are classified in the trade returns as unbleached, bleached, printed, and dyed. The British East Indies receive more than half our total export of *unbleached goods*, and other good customers for these manufactures are China, Turkey, Egypt, Japan, Java, and the European continent, besides our colonial possessions in Australasia, West Africa, North America, the West Indies, and South Africa. *Bleached cotton goods*, like the unbleached kinds, are sent from Britain to all parts of the world. Nearly one-half of them are exported to the British East Indies, and among the more noteworthy of the other importers of our bleached piece-goods are Turkey, China, Egypt, Morocco, Java, the United States and Cuba, and the South American republics, besides the Australasian, West Indian, West African, South African, North American, and other colonies. Our best customers for exported *cotton prints* are the East Indies, Turkey, Australasia, Egypt, Java,

Cuba, the South American republics, West Africa, and South Africa. Our *dyed cotton piece-goods* are taken principally by India, China, Turkey, Australasia, the United States and Cuba, Egypt, the South American republics, and the European continent. Our exported *cotton thread* goes mostly to the countries of the European mainland, especially Germany and Belgium. We import a small amount of cotton piece-goods from Germany, the United States, and other foreign countries, and also from the British East Indies and other colonial possessions.

### Our Cotton Industry

A century ago the woollen and linen manufactures of Britain were each more valuable than the cotton manu-



The Cotton District.

factures, but the cotton industry is now more important than the other two combined. The chief seat of the cotton manufacture is Lancashire, where numerous large



towns, with Manchester at their head, are dependent upon the spinning and weaving of imported cotton. Liverpool is the port of this great industrial district. The cotton manufacture is steadily developing in British India, especially in Bombay. Egypt is important as a producer of raw cotton, and cotton-growing is being developed in British West Africa, especially S. Nigeria.

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## 71. Wool

Value of woollens in temperate climates—Change in British wool industry—An industrial transformation—What wool is—Difference from hair—Felting—Mohair—Alpaca and vicuña—British wool—Colonial wool—Australian the best—Source of alpaca and vicuña—Source of mohair—Export of raw wool—Preparation of the wool—Woollens and worsteds—Exports of woollens and worsteds—Markets for them—Seats of the manufacture—Origin of names “tweed” and “worsted”.

### The Woollen Industry

In temperate countries woollen cloths are in greater demand for clothing than cottons, principally because they retain heat better. For several centuries wool was the chief article of export from Britain, and most of our exported wool was manufactured in Flanders. Now we import large quantities of raw wool, and export immense amounts of woollen and worsted fabrics of different kinds. This is an interesting illustration of the industrial transformation of Britain from a country producing the raw materials of manufacture to a country which works up the raw materials of other lands into finished goods for its own use and the use of other peoples.

## Raw Wool

Wool is the natural covering of the domestic sheep. It is similar to hair in some ways, but it differs from hair in being very elastic and in having a covering of minute overlapping scales. These characteristics are not found in cotton, which is thus, unlike wool, incapable of being *felted*, that is, made into cloth by rolling and beating, without weaving. Besides wool proper, several other materials are used in the woollen industry. *Mohair*, a kind of wool or hair obtained from the Angora goat, is one of the most important of these; and the woolly coverings of the South American *alpaca* and *vicuña* are also made into cloth to a considerable extent.

Many sheep are pastured in the United Kingdom, and they furnish a considerable amount of raw wool for our woollen factories; but we import no less than 500 thousand tons of sheep's wool every year. We have already seen that our colonies furnish only a small proportion of our raw cotton, and our self-governing colonies practically none at all. It is very different with wool. No less than five-sixths of our total of imported wool comes to us from our colonial possessions. The Australasian colonies send us more than 300 thousand tons a year, and their wool is the finest produced anywhere. We also get a large amount of raw wool from South Africa, but it is greatly inferior in quality to that from Australasia. India sends a considerable weight of wool, but it can be used only for the less valuable fabrics. The little colony of the Falkland Islands, near the southern point of South America, thrives mostly by sheep-rearing, and exports

a fairly large quantity of wool to Britain. Sheep-rearing is not an important industry in British North America.

Practically all our imported alpaca and vicuña wool is obtained from the South American republics of Peru and Chili. The Angora goat is indigenous in Asia Minor, but it was introduced long ago into South Africa, and we now get a larger quantity of mohair from Cape Colony and Natal than from Asiatic Turkey. It is worthy of note that, even while importing large quantities of wool from abroad, we export a great amount of our native raw wool, principally to the United States.

### Woollen Manufacture

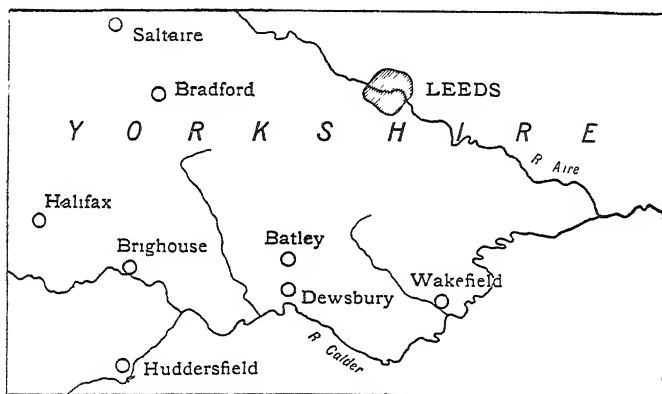
Before the raw wool can be spun into yarn, it must undergo several preliminary operations. It is first sorted into varieties of different quality, and then the natural grease or yolk must be removed by scouring. The next operation is carding or combing, which disentangles the fibres and prepares them for the spinner. Two kinds of yarn are made from wool, namely, *woollen yarn proper* and *worsted*, and these are manufactured into different kinds of fabrics.

### Woollen Trade

Britain exports about 30 thousand tons of woollen and worsted yarn of various sorts every year, mostly to Germany and other European countries. She sends to other countries each year about 100,000 miles of woollen and worsted tissues of various kinds; that is, about enough to go four times round the earth at the equator. Some of these goods are woollens in the special sense, but a larger part consists of worsted fabrics. Some, again,

are made from wool only, but a much larger proportion is made up of tissues manufactured from several fibres, of which wool is the most important.

These exported woollen and worsted tissues are sent to all parts of the world. The chief countries of the European continent take large quantities, and the United States is also a good customer. China, Japan, and the republics of South America are the other chief foreign



The Woollen Towns

countries which receive British woollen goods. Australasia, Canada, India, and South Africa import very large amounts of woollen and worsted stuffs from the United Kingdom, because their own woollen manufactures are as yet only in their infancy.

### Seats of the Manufacture

The woollen manufacture is actively carried on in the West Riding of Yorkshire, in and around Leeds and

Bradford. It is also of importance in some other parts of the country, notably the valley of the Tweed about Galashiels. The river Tweed has, indeed, given its name to a well-known variety of woollen cloth, chiefly used for suitings. The name worsted is formed from that of Worstead, a small place in Norfolk, where the worsted industry was once important.

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## 72. Silk and Linen

What silk is—The silk-worm—The cocoon—Filatures—Raw silk—Husks, knubs, and waste—Throwing—Spinning of waste—French silk manufacture—British silk industry—British import of raw silk—Imports of yarn and goods—India as silk-producer—What linen is—Flax—British crop of flax—British linen manufacture—Imported flax, linen yarn, and linen goods—Exported yarn and goods.

### The Silk-worm

Cotton and wool are by far the most important raw materials of the textile industries, but silk and flax are also of considerable industrial value. *Silk* is, like wool, an animal product, but it is of totally different character, and comes from a very different kind of animal. The so-called *silk-worm* is the larva or caterpillar of a kind of moth. It feeds on the leaves of several kinds of trees, especially on those of the white mulberry, and sheds its whole skin two or three times during its larval life.

Like the caterpillars of our butterflies, the silk-worm passes into a resting state, in which it is called a *pupa* or *chrysalis*, and from which it emerges after a time as a fully-developed moth. Before entering on its pupal sleep it secretes a fine thread, which it wraps round its

body so as to form a covering known as a *cocoon*. This thread is the material we call silk, but it cannot be used for weaving into silk fabrics until it has undergone a preliminary treatment.

### Raw Silk

The fine silk fibre of the cocoons is reeled off, and the fibres from several cocoons are united so as to form a thicker and stronger thread. This is carried out in factories called *filatures*, and the product is known as raw silk. The parts of the silk that cannot be reeled off are sent into the market as *husks* and *knubs*, and fragments of refuse thread are sold as *waste* to manufacturers.

The raw silk does not require to go through all the operations of spinning as applied to cotton or wool; it is merely given a slight twist in the process known as throwing. The waste silk is now extensively made into silk fabrics by processes essentially the same as the spinning and weaving employed in the cotton and woollen industries. The chief silk-manufacturing country of the world is France, in which Lyons is the headquarters of the industry. The silk industry of Britain has been declining for many years, but it is still carried on in various parts of the country.

### The Silk Trade

Britain imports about 1 million pounds' weight of raw silk, chiefly from China, Japan, and India; and she also imports a fair quantity of knubs, husks, and waste. We buy thrown and spun yarn from the Continent, especially from France and Holland. The total

value of the silk stuffs, including satins and velvets, imported into Britain each year is about 23 million pounds sterling. The greater part of this comes from France. Among British possessions the only one of any importance as a silk-producer is India.

### The Linen Industry

*Linen* is made from the fibre of the inner bark of flax, a plant closely allied to the geraniums. *Flax* has been cultivated from very remote times, and we have unquestionable evidence of the use of linen at a very early date. At the present day Russia is the chief flax-growing country. Great Britain once grew a considerable quantity of flax, but her crop is now trifling. In Ireland, too, the area under flax declined steadily for many years, but it has again begun to increase. The manufacture of linen in the United Kingdom is carried on chiefly in Belfast and other places in the north of Ireland, in Dunfermline and other towns of Fife, in Dundee, and in the West Riding of Yorkshire.

Britain imports flax for her linen manufacture mostly from Russia and Belgium; and she imports linen yarn and linen goods from Belgium, France, and Germany principally. British exports of linen yarn are sent chiefly to the European continent and the United States, but some of our colonies, notably Canada, take a fair share. The chief market for our exported linen manufactures is the United States, but large amounts are also taken by the continental countries, Egypt, South America, Australasia, and Canada.

## 73. Jute, Hemp, and other Fibres

What jute is—Indian jute—Introduction into Britain—Uses—Dundee the chief seat of the jute industry—Imports of jute—Exports of jute goods—What hemp is—Where grown—Uses—Uses in India—Rhea—Coir—Mamla hemp—Henequen—Phormium.

### Jute and the Jute Industry

*Jute* is manufactured from the fibrous inner bark of two very similar plants of the same group as the lime-tree. They are grown extensively in the lower valley of the Ganges, in India, and the fibre is worked up in mills at Calcutta. The fibre was introduced into Britain only as recently as about 1830, but it was used by the Hindus at a much earlier date. At first it was not favourably regarded in Britain, but it soon gained a secure position for certain kinds of coarse fabrics.

It has a fine texture and a glossy surface, but it is easily damaged by water, and it does not retain dyes well. It is made into sacks and bags, especially the *gunny-bags* used in the East for packing rice, cotton, and other commodities. It is also employed for backing carpets, and even in cheap satins and silks.

Dundee has all along been the chief seat of the jute industry in Britain. We import more than 150,000 tons of raw jute, nearly all from Bengal, and we receive a considerable quantity of jute yarn, chiefly from France and Belgium. India sends us more than two million pounds' worth of jute manufactures. More than half of our total export of jute yarn is taken by Brazil, and the United States takes more than half our considerable export of jute piece-goods.



## Hemp

*Hemp* is the fibre obtained from a plant of the same family as the elm-tree and the nettle. It is a native of the warmer parts of Asia, but it has been introduced into many parts of Europe and America, and it readily adapts itself to widely different climates. The hemp crop of Britain is small and unimportant, but some of the continental countries and the American state of Kentucky are important as hemp-growers. Like jute, hemp is used only for making the coarser fabrics. It is splendidly adapted for sail-cloth, and it is the principal rope-making fibre. In India hemp is grown to provide the material for an intoxicating drink, and as a source of the drug known as *blang*.

## Other Fibres

Cotton, wool, silk, flax, jute, and hemp are the most useful fibres, but many others are known, and some of them are of considerable value. *Rhea*, *ramie*, or *China grass* is obtained from a plant of the nettle family which has long been cultivated in eastern Asia. It is an exceedingly fine fibre of great strength, and is admirably adapted for bleaching and dyeing, but it cannot as yet be cheaply manufactured. The fibre of the cocoa-nut is known as *coir*, and is used to some extent in making mats and ropes, especially in the Polynesian Islands. *Manila hemp* is a product of a plant very closely related to the banana plant, and found in the Philippine Islands. In the United States true hemp has been largely supplanted by Manila hemp and by a Mexican fibre called

*henequen* or *sisal hemp*. *Phormium*, also called *New Zealand flax*, is used to some extent in making cordage and woven fabrics.

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## 74. Pottery and Glass

Uses of clay—Origin of clay—Composition of clay—Properties of clay—Kaolin—Pipe-clay—Fire-clays—The Potteries—Exports of clay bricks, and earthenware—Imports of earthenware—Composition of glass—Materials for glass-making—Glass manufacture—Coloured glasses—Glass exports and imports.

### Clay

*Clay* is a substance of great industrial importance, for it is the material used in making porcelain, earthenware, tiles, and bricks. It is formed by the natural breaking-up and decay of the rock known as *granite*. It is a compound of a metal already mentioned, aluminium, but it is not itself a metal. In clay aluminium is combined with a substance known as *silica*, which occurs separately in nature in the form of quartz. The well-known cairngorms are one of the numerous varieties of quartz.

Clay is very plastic, that is to say, it can be kneaded, when wet, into any desired shape; and it can also be dried in a kiln or furnace so as to become hard and durable. These are the two properties which make clay so valuable. The potter or brick-maker first works the clay into the shape required, and then fixes it in that shape by strong heating.

The purest form of clay is called *kaolin* or *China clay*, and occurs in parts of Cornwall and Devon, as well as

Belgium, Germany, Holland, and France. Our annual export of bricks amounts to about 90 million, our best customers being the United States, Canada, and some of the European countries. Of earthen and china ware we send out of the country every year over two millions' worth, especially to the United States, Canada, and the Continent. We do not import bricks or clay, but we import chinaware and earthenware to the value of over £1,000,000, chiefly from Germany, Holland, and France.

### The Glass Industry

We have just seen that silica is an important constituent of clay. It also enters into *glass* along with several other substances. Most glasses contain, in addition to silica, *soda* and *lime*, but others contain *potash* and *lime*, or *potash* and *lead*, or other similar combinations. The silica is obtained from sand found in Lancashire and Bedfordshire, or imported from Belgium; the lime is made from limestone or chalk, which is abundant in Britain; and the soda is furnished by soda-ash or salt-cake, both of which are extensively made in Britain from common salt. Thus *salt*, *chalk*, and *sand* are the ultimate materials for the commonest glasses. The sand, lime, and soda-ash are mixed together and melted in a special form of furnace. The glass which forms is then cast into large plates, forming plate-glass, or blown so as to produce ordinary window-glass and other kinds. Coloured glasses are made by adding oxides of certain metals to ordinary colourless varieties.

Britain exports annually about 70,000 tons of glass

in all forms, plate-glass, bottles, &c., her best customers being the United States and some British colonies, especially Canada and Cape Colony. She imports every year, in addition to a large number of bottles, about 140,000 tons of glass in several forms, principally from Belgium and Germany.

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## 75. Leather and Leather Manufactures

Hides and skins—Need for tanning—Preparation for tanning—Tannins—Tanning substances—Tawing—Chamois leather—Finishing—Patent leather—Morocco leather—Uses of leather—Imported hides and skins—Sources of import—Imported leather—Exports of hides, skins, and leather—Exports of boots and shoes—Imports of boots and shoes—Imports of gloves.

### Hides and Skins

Leather is made from the skins of animals. The skins of large animals, such as oxen, cows, horses, and buffaloes, are known as *hides*, and those of smaller animals, such as calves, sheep, and goats, simply as *skins*. Hides and skins, when removed from the animals, soon begin to rot if they are kept wet, or become hard and stiff on drying. In order to make them of practical use they must be treated in such a way as to prevent decay and to keep them soft.

### Tanning and Tawing

They are first cleaned thoroughly, and the hair is afterwards removed. Then comes the most important process, known as *tanning*. The prepared hides and

skins are steeped in tanning liquors, made from various substances containing the bodies called tannins by the chemist. *Oak bark* is one of the best of these tanning substances, and among others are *valonia*, consisting of the acorn-cups of certain kinds of oak-tree, *myrobalans*, the fruit of an Indian tree; *sumach*, the ground leaves of a Sicilian plant; *gambier*, prepared from the leaves of a Malayan shrub, and *cutch*, a product of the wood of certain East Indian trees.

Some forms of leather are tanned with alum and other similar substances. This process is called *tawing*, and among leathers produced by it is the common *kid-leather*. *Chamois leather* is made by soaking the skins in whale or cod-liver oil. After tanning the leather undergoes various finishing operations. *Patent leather* is made by coating stretched skins with a varnish made from lampblack, linseed oil, and other substances, and afterwards polishing the surface. True *morocco leather* is made from goat skins tanned with sumach, but the name is now given to other similar kinds of leather.

### Uses of Leather

Leather is of very great practical importance. It is made into boots and shoes, bags of all sorts, purses, straps and belts of every description, including belting for machinery, harness and saddlery, cushions, and numerous other articles of everyday use, and it is one of the chief materials in bookbinding. It is hard to think what we could get to take the place of leather.

### The Leather Trade

Our British tanners use the hides and skins of our own animals in making leather, but they have also to import large quantities. The hides we import, valued at about £20,000,000 a year, come chiefly from the Continent, the East Indies, South Africa, and Australia. We get undressed goat skins to the value of several million pounds, mostly from India, France, and the Cape of Good Hope; and our imports of undressed sheep skins, with a practically equal value, come principally from Australia and New Zealand, Cape Colony, and the Argentine Republic. Australia, New Zealand, France, and Belgium supply us with most of our rabbit skins, and our seal skins come mainly from Newfoundland, Norway, Canada, Russia, and the United States.

We get not only hides and skins, but also leather from abroad, chiefly from the United States and India, the weight imported annually amounting to over 50,000 tons. We export a fair quantity of our native hides and skins to Canada and the United States especially, and of unwrought leather we send out of the country over 10,000 tons a year, chiefly to France and Germany. Our total export of leather boots and shoes amounts to nearly 9½ million pairs, and goes principally to British colonial possessions in South Africa, Australasia, India, and the West Indies. We import about 3 million pairs of boots and shoes. Of gloves our import is about 20 million pairs, practically all from France, Germany, Belgium and Holland.

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## 76. The Timber Trade

British timber—Wide use of timber—Imported timber—Pine wood—Varieties of pine—Affinities of pine—Softwood and hardwood—Uses of the two kinds—Canadian and States pine, raw and manufactured—American hardwoods—American furniture imported—Mahogany—Australian mahogany—Karri and jarrah—Teak—Logwood—Cork—Our cork supplies.

### Usefulness of Timber

Timber is not a great product of the British Isles. We have no large forests such as those of America, India, and Australia. If we had to rely solely upon our home supply of timber, we should be sadly put about for want of this most necessary of materials. Turn where we will we see timber. In our houses, the beams and joists, the flooring, window-frames, shutters, doors, are made of timber; our furniture is of hardwood of one kind or another. In the schools desks, forms, blackboards, slate-frames, and ever so many other things, are all of wood. In the streets we see scaffolding, sheds, wheel-barrows, cabs, carts, and whichever way we look we see wood in use for one purpose or another. In London and other large towns the very roadway itself is paved with blocks of wood.

Now, where does all this timber come from?

### Pine

Much comes from foreign countries, particularly from the United States, Norway, Sweden, Russia, and Austria. But we also depend largely on the forests of our colonies. Of all woods the most widely useful is *pine*,

the wood which supplies ordinary deal boards. There are different kinds of pine—white pine, yellow pine, pitch pine, red pine; but we need not go into these differences. Pine timber in general is easily worked, provides long straight boards, beams, and planks, and for this reason is used in all the ordinary work of the carpenter.

The pine is a member of the fir tribe. It is closely related to the *spruce-fir* and to the giant *cedar* of British Columbia. All these are valuable timber trees, and all are of the kind that do not shed their leaves in winter. The wood of these trees is often called *softwood*, to distinguish it from *hardwood*, the name given to the wood of trees that shed their leaves in winter. The wood of such trees is generally much harder and more difficult to work than pine. *Hardwood* of one kind or another is used for making furniture, *softwood* in the ordinary operations of the carpenter and joiner.

From Canada and the United States we receive a great amount of pine timber. Much comes in the form of great squared logs, which are, in our saw-mills, sawn into planks and boards. Much also is sawn up in the saw-mills of Canada and the States, and is sent to us ready-made into planks and boards; and much comes in the form of window-sashes, doors, and other parts, ready for use by the joiner.

### Hardwood

But Canada and the States provide much hardwood as well as pine. *Oak*, *beech*, *walnut*, and *maple* are brought over to be made into furniture and other things for which a hard, durable wood is required.

Many articles of furniture are made both in Canada



and the States for the special purpose of being sold to Britain. From the States there come step-ladders, neat little tables, towel-rails, besides chairs with curved wooden seats, office-desks, and many another handy piece of furniture. Canada now also sends us office-desks, school furniture, and other similar things.

The most important wood of all for furniture, namely, *mahogany*, does not come from either the States or Canada. The great source of supply of this beautiful and valuable wood is the West Indian colony of British Honduras. From Sierra Leone in Africa we get a certain kind of mahogany, and from India and Ceylon still other kinds. There are certain woods procured in other regions of the empire that also go by the name of *mahogany*, but they differ from, and are not so valuable as, the real mahogany. The wood of the Australian red-gum tree is sometimes called *Australian mahogany*, and is imported to some extent. There are a number of other kinds of gum-trees in Australia, some of which supply very durable timber imported for use in ship-building and otherwise. The gum-trees known as *karri* and *jarrah* supply blocks that are used for paving streets, particularly in London.

In our ships of war and great ocean steamers a great deal of *teak* is used. It is brought chiefly from Burma, where, in the words of the poet Kipling, you can see "Elephants a' pilin' teak". It is an extremely hard and heavy wood, and, on account of its hardness, is sometimes called iron-wood. In the ships of the navy it is used inside the armour to strengthen the sides of the ship. In ordinary steamers it can be seen in the gratings on the floors and in many other fittings.

### Logwood and Cork

*Logwood* is largely imported from British Honduras and the West Indies for use in dyeing. *Cork*, though not a timber, is obtained from a kind of oak-tree, of which it forms the greater part of the bark. It is a valuable substance, and its uses are too well known to require mention. We import raw cork chiefly from Portugal and Spain, and manufactured cork mostly from Portugal, France, and Spain.

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## 77. Soap, Soda, &c.

**Importance of soap**—How soap is made—Animal fats—Vegetable fats and oils—Glycerine—Varieties of soap—Sulphuric acid industry—How sulphuric acid is made—Salt-cake—Soda-ash—Washing soda and baking soda—Caustic soda—Interdependence of industry—Candles: how made—Trade in candles—Trade in soap—Trade in soda compounds.

### Importance of Soap

It is needless to dwell upon the importance of soap in civilized countries, because few things are in more constant use by everyone. For cleansing of every sort it is absolutely necessary in some of its many forms, and we might estimate progress in civilization by the extent to which soap is used. The soap-making industry is one of great and growing importance in our country, as in every civilized country.

### How Soap is Made

*Soap* is made from various animal and vegetable fats and oils by boiling them with a substance called caustic

soda. Of caustic soda we shall learn something presently. The animal fats used include *tallow*, from oxen and sheep, and *lard*, from pigs; and among vegetable sources of soap are *palm oil*, *cocoa-nut oil*, *cotton-seed oil*, *linseed oil*, *castor oil*, *olive oil*, and certain bodies called *vegetable tallows*. When these are boiled with caustic soda the products are soap and *glycerine*. The different substances yield different kinds of soap, some of them very coarse and only fit for rough purposes, others very pure and suited for the toilet.

### The Soda Industries

The manufacture of *sulphuric acid* or *oil of vitriol* is one of the most important of British chemical industries, and is the starting-point of a series of valuable manufactures. Sulphuric acid is made from *nitric acid*, which is obtained from cubic nitre or Chili saltpetre, and *sulphur*, which occurs combined with iron in pyrites. From sulphuric acid and common salt we obtain another substance called *sodium sulphate* or *salt-cake*. Salt-cake can be transformed by the action of powdered coal and limestone into another useful substance known as *soda-ash*, and from this it is easy to make common *washing soda* and *baking soda*. If soda-ash be treated with milk of lime we get *caustic soda* as the principal product, and caustic soda, as we have seen, is one of the materials of the soap industry. These chemical industries are an excellent illustration of the fact that our manufacturing industries are closely dependent upon one another.

### Candles

The stock of *candles* may be of tallow, as in the cheapest kinds, of paraffin, or of other similar material. Candles were formerly made by dipping the wicks into the melted stock, but they are now mostly moulded, that is, shaped by running the stock into a vessel of the shape of the finished candle. We import several hundred tons of candles every year from Germany, Holland, and Belgium, and we export a fair quantity to South Africa, New Zealand, Morocco, China, and elsewhere.

### Trade in Soap and Soda

We import about 10 per cent of the quantity of soap we export; our imports of soap come mostly from the United States of America. Of caustic soda and potash, which are used in the manufacture of various kinds of soaps and of glass, we import also about 10 per cent of the quantity we export.

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## 78. Paper and Paper-Making Materials

What paper is—Paper-making materials—Preliminary treatment of rags—Beating of the pulp—Sizing and tinting—Paper-machine—Esparto—Straw—Wood pulp—Chief pulp trees—Two kinds of pulp—Treatment of pulp—Trade in paper and its materials.

### What Paper Is

Paper consists of various vegetable fibres felted together so as to form more or less thin sheets. The

principal materials used in paper-making are linen and cotton rags, esparto-grass, several kinds of straw, and wood pulp. Rags have long been used for making paper, but esparto and wood pulp are of much more recent introduction.

### Rag Paper

*Rags* must undergo a preliminary treatment before they can be made into paper. They are cleaned in a machine, and then sorted into qualities suitable for different kinds of paper. They are next cut, either by hand or by machinery, into pieces of convenient size, and these are boiled to remove dirt, colouring-matter, and other foreign substances. The boiled rags are then broken up, by means of a special machine called a *breaker*, into a fine pulp, and the paper-making proper then begins.

The beating of the pulp is an operation requiring great care and skill, and is effected by a *beating engine*. During beating various substances are added to the pulp, among them size, which makes the paper non-absorbent of ink or other liquids. The required tint must also be given to the paper at this stage. The beaten pulp is next passed to the paper-machine or made into paper by hand, but only the finest papers are now hand-made. The *paper-machine* is an elaborate one and need not be described here. The pulp is carried in it on an endless mould of fine wire-cloth, so as to be pressed between rollers and dried on steam-heated cylinders. The paper thus made is prepared for the market by glazing and cutting to the standard sizes.

### Esparto and Straw

*Esparto* or *alfa* is a grass found growing wild in the south of Europe and in northern Africa. Its use as a source of paper is almost confined to the United Kingdom, and the method of manufacture is similar to that for linen and cotton rags, except that additional processes of cleaning and purifying are required. On the continent of Europe various kinds of *straw*, especially those of rye and oats, take the place of esparto as paper-making materials.

### Pulp Paper

*Wood pulp* is a material of very recent introduction into the paper industry. It is largely used in countries such as Norway and Sweden, Canada, the United States, and Germany, which have large forests of suitable timber, and it is also extensively imported into Britain and other countries. Spruces, pines, and poplars furnish the best pulp.

Some of the pulp is prepared from the wood merely by breaking it up by machinery, but the best kinds are prepared by a chemical process. Two chief chemical processes are in use, giving rise to different qualities of paper. The method of treating the pulp after it has been obtained is substantially the same as that described above for rags.

### Trade in Paper and Paper Materials

Britain imports large quantities of rags for paper-making every year, mostly from the continent of Europe. Of esparto and similar materials we import yearly a

much larger quantity from Spain and North Africa. Our annual import of chemical pulp is almost as great as that of esparto, and comes mostly from Scandinavia. Of mechanical pulp we import annually nearly twice as much as of esparto, mostly from Norway and Canada. Of paper-making materials we import not far short of 1,500,000 tons. We import also some 200,000 tons of paper, chiefly from Scandinavia and other Continental countries and from the United States, but including a fair amount from Canada. In addition, we import straw-board, mill board, and wood-pulp board to the total amount of about 125,000 tons, mostly from Holland. We also export a fair amount of paper.

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## 79. Oil-Seeds, Oil-Cake, &c.

Oil-seeds—Development of Indian industry—Uses of oils—Linseed oil—Its uses—Linseed cake—Linseed meal—Drying oils—Cotton-seed oil and cake—Gingelly oil—Colza oil—Castor oil—Olive oil—Palm oil—Cocoa-nut oil—Imports of oil and cake—India's oil industry.

### Uses of Oils

The seeds of many plants yield a valuable oil, which is extracted from them by crushing in a suitable press. Several plants have long been cultivated in India for their oil, but the industry has developed in recent times in consequence of the increased demand for the oils in Europe. The uses of these oils are very varied. Some are used in cooking, preserving, and similar processes, being known as *table oils*. Others are valuable for lighting, and still others for the oiling or lubrication of

machinery. Several are employed in medicine and perfumery, in making candles, in the preparation of painters' colours, and especially in the manufacture of soap.

### Linseed Oil

One of the most important of such vegetable oils is *linseed oil*, which is obtained from the seeds of the flax plant. Flax is grown for its oil in many countries, but the Indian oil is regarded as one of the best varieties. It is used in soap-making, in making varnishes and paints, in the preparation of oil-cloth and linoleum, and in making printing inks. The *linseed cake* left after expressing the oil from the seeds is an excellent food for cattle. The *linseed meal* prepared from the seeds is well known as a material for poultices. Linseed oil is a good drying oil, that is, it dries readily on exposure to the air. Other good drying oils are those made from the *opium poppy*, *hemp*, and *sunflower*.

### Other Oils

The seeds of the cotton plant yield a useful oil (*cottonseed oil*) and oil-cake. The oil-cake is used as a cattle food or as a manure, and the oil is employed in soap-making and in the preparation of certain foods. *Sesamum*, *til*, or *gingelly oil* is extracted from the seeds of the sesamum plant, which is cultivated for the purpose in India, Egypt, and Asia Minor. It is used as a table oil, and also as an illuminant.

*Rapeseed* or *colza oil* is the product of a plant closely related to the cabbage and the turnip. It is a very valuable illuminant, but it is often adulterated with other



oils. It is also much used as a lubricant. *Castor oil*, which is expressed from the seeds of a plant of the same family as the box-tree and the tapioca plant, is of very great value in medicine, and is also much used in soap-making and as a lubricant.

*Olive oil*, one of the best known of all oils, is obtained from the fruit of the olive-tree of southern Europe and Syria. It is used in place of butter in the countries where it is produced, and inferior qualities are employed as illuminants and lubricants. It is also of considerable value in medicine. *Palm oil* is a semi-solid substance obtained from the fruit of a kind of palm which grows wild in West Africa. It is used in soap-making and as a lubricant. The cocoa-nut also yields an oil, called *cocoa-nut oil*, which is used in making soaps and candles.

### Trade in Oils

Britain imports castor oil chiefly from France, India, and Belgium; cocoa-nut oil mostly from Ceylon and New South Wales; olive oil mostly from Italy, Turkey, and Spain; palm oil mostly from British West Africa; and cotton-seed oil chiefly from the United States. Cotton-seed cake comes also mostly from the United States, but we get cotton seeds chiefly from Egypt. We take our linseed mostly from India, the Argentine Republic, and Russia, and we import linseed cake from Germany, Russia, and the United States.

The total area under oil-seeds in British India, not including the native states, is about 13 million acres, of which sesamum occupies nearly a third, rape and mustard about a fifth, and linseed about a sixth. Every year

India exports from half a million to a million tons of oil-seeds.

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## 80. Gums, Caoutchouc, &c.

Gum-arabic—Its uses—Tragacanth—Sources of gum-arabic—India-rubber—Vulcanized rubber—Vulcanite—Uses of india-rubber—The rubber industry and trade—Gutta-percha—Its uses—Balata—Its use—Resins—Rosin—Its uses—Amber—Copal—Kauri-gum—Guaiacum—Lac—Shellac.

### Gum-arabic

The ordinary gum of the shops is *gum-arabic*, a gum secreted on the bark of certain acacia trees, especially in the Sudan countries of northern Africa. It varies in colour from white to reddish-brown, and easily dissolves in water. Besides its ordinary use as mucilage, it is employed in calico-printing, for stiffening cloth, and by the physician in preparing prescriptions. Another gum, used for the same purposes, is *tragacanth*, which is produced by spiny shrubs of the pea family found growing wild in Asia Minor. Our import of gum-arabic comes mostly from Egypt, India, Persia, and France.

### India-rubber

*India-rubber* or *caoutchouc* is a substance of great practical importance. It is found in the milky juice of several tropical and sub-tropical trees, and is obtained from them by making cuts in the bark. If rubber is heated to a high temperature with sulphur it undergoes an important change, which makes it more elastic and better adapted for many practical uses. In this state it

is known as *vulcanized rubber*. *Vulcanite* is a hard form of vulcanized rubber. India-rubber was introduced into Britain about the end of the eighteenth century, and was, at first, chiefly used for rubbing out pencil-marks, whence its name "rubber". To-day, in its many forms, it has almost innumerable uses—rubber tyres, waterproof cloth, waterproof boots and overshoes, rubber sheeting and flooring, and many appliances in surgery are examples. We import rapidly increasing quantities chiefly from Malay, Ceylon, and Brazil.

### Gutta-percha and Balata

*Gutta-percha* is very similar in many respects to india-rubber. It is obtained from the milky juice of a tree which grows wild in the Malay Peninsula and Archipelago. We import it mostly from the Straits Settlements. It is used in making belts for machinery, telegraph cables, hose-piping, boots and shoes, golf-balls, and many other articles, and also in surgery. Unlike caoutchouc, it is almost entirely inelastic. *Balata* is intermediate between gutta-percha and caoutchouc. It is produced by a tree of tropical America, and is now much used for belting.

### Resins

Resins differ from gums in being insoluble in water. The best known of the resins is common *rosin*, which is prepared by distilling off the turpentine oil from the crude turpentine obtained from certain pine-trees. Its uses are many. It is added to some kinds of laundry soap, and is used in making cheap varnishes, and it is also employed by the druggist.

*Amber* is the hardest of the resins, and is much prized for various ornamental purposes. It is found along the Baltic coast. Next to amber in hardness is the harder variety of *copal*, which is exported from various parts of Africa Asia, and South America. The so-called *kauri-gum* of New Zealand is really a resin, and is extensively used in varnish-making. It is obtained partly from kauri-pines, partly by digging in ground where the kauri-pine formerly grew. *Guaiacum* is a West Indian resin used in medicine. *Lac* is produced in certain kinds of Indian fig-trees by the sting of small insects. One of its preparations is called *shellac*. It is used in making varnishes and sealing-wax.

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## 81. Manures

Virgin soils—Manuring in older countries—Nitrogen and phosphorus—Artificial and natural manures—Sea-weed, fish, and bones—Guano—Nitrogenous and phosphatic forms—Cubic nitre—Phosphates—Imports of manures.

### Need for Manures

On rich virgin soils crops can be grown for many years without any efforts being made to improve or maintain the quality of the soil, but a time must come when the soil becomes exhausted. The growing crops withdraw certain food-substances from the soil, and these must be restored in the form of manures before any more crops can be raised. In old countries the success of agriculture is very largely dependent upon proper manuring.

The substances that require to be added to the soil in the form of manures are chiefly nitrogen and phosphorus.

*Nitrogen* in its simple state is one of the gases in the air, and *phosphorus* is used in making the heads of matches; but neither is added to soils in a simple or elementary condition. The ordinary manures contain them in combination with other elements.

### Kinds of Manure

All manures other than those from animals and remains of plants are known as *artificial manures*. Sea-weed, fish, and bones are all used as manures to some extent, but certain other substances are of much greater importance in this respect.

*Guano* consists of the excrement and carcasses of various sea-birds, and occurs naturally in various parts of the world, especially along the west coast of South America and on many of the Pacific islands. Fresh guano is rich in nitrogen, and in a dry climate like that of Peru the deposits remain highly nitrogenous. Where the climate is moist, as in the Pacific Ocean, the nitrogenous bodies are decomposed and the nitrogen is mostly removed, leaving a manure rich in phosphorus but poor in nitrogen.

*Cubic nitre* or *Chili saltpetre* is one of the most valuable and widely used of all nitrogenous manures. Extensive natural deposits of it occur in northern Chili and neighbouring parts of South America. *Phosphates*, a group of substances containing phosphorus, occur naturally in the form of rock in South Carolina, northern France, the West Indies, Christmas Island, and other places, but they cannot be used as manure until they have been crushed and treated with sulphuric acid.

### Trade in Manures

Of the large quantities of manure used in Britain, more than half comes from India. Of her large annual import of guano, more than half is sent from Peru. The greater part of the *nitrate of soda* or *cubic nitre*, which Britain imports, comes from Chili. The phosphates and phosphate rock imported into Britain for agricultural purposes come mainly from the United States of America, particularly from Florida and South Carolina.

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## 82. Dyeing and Dye-stuffs

What goods may be dyed—Dyeing and the textile industries—Mordants—Direct and indirect dyeing—Indigo—Artificial indigo—Madder—Logwood—Cochineal—Fustic—Young fustic—Artificial dyeing industry—Sir W. Perkins' mauve.

### The Dyeing Industry

Feathers, leather, ivory, horn, and other similar materials may be dyed, but the chief articles treated by the dyer are textile fabrics, and the dyeing industry is closely associated with the textile industries. Some dye-stuffs colour fibres directly, without the presence of any other substances, but others will produce colour only when associated with substances called *mordants*, and in some cases the latter produce different colours with different mordants.

Many different substances are used as dyes, and the method of dyeing varies according to the nature of the dye and of the substance to be dyed. Silk and wool, the animal fibres, are generally dyed directly, without mor-

dants, but cotton and linen usually require a mordant. Some of the processes in dyeing are now carried out by machines.

### Dye-stuffs

*Indigo* is one of the oldest known dyes. It is obtained, chiefly in India, from the indigo plant, which belongs to the pea family, and it comes into commerce in the form of dark-blue cubical cakes. Natural indigo is now displaced by artificial indigo, which before the Great War was largely manufactured in Germany.

*Madder* was formerly a very important dye-stuff in the Turkey-red industry, but it has been almost entirely replaced by *alizarin*, manufactured from coal-tar. It consists of the pulverized root of a plant closely related to the wild goose-grass and woodruff. *Logwood*, from a Central American tree, is an important dye-stuff. It is imported in the form of logs, chips, or extract. *Cochineal* consists of the dried bodies of certain insects found in Central America, Algeria, and the East Indies. *Fustic* is the heart-wood of a tree of South America and the West Indies, and *young fustic* is the heart-wood of another tree found on the continent of Europe.

The artificial dyeing industry is now of very great importance, but it dates only from 1856, when Sir William Perkin succeeded in making *mauve* from coal-tar. The number of these dyes is now very great, and their manufacture is a flourishing industry.

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## 83. Ship-building and Shipping

Britain's greatness in ship-building and shipping—Great growth of shipping—World's output of ships—British output—Chief ship-building districts—United States and Germany—The colonies as ship-builders—British export of ships—Vessels entered at British ports—Vessels registered at British ports—Vessels of the Empire—Proportion of steam to sail—Britain's carrying trade—The earnings of British shipping, and how paid—Ports of the Empire.

### Importance of British Shipping

Britain is the greatest ship-owning and ship-building country of the world. More than one-third of the whole tonnage of the world belongs to British ship-owners. Much of the world's trade is carried in British ships, and a considerable part of the imperial navy is intended principally for the defence and protection of British merchant vessels in time of war. The growth of British shipping during the last half-century has been enormous. The earnings of our shipping are nearly as great as the earnings of all our railways, and greater than the value of the product of the cotton industry, which is our leading manufacture.

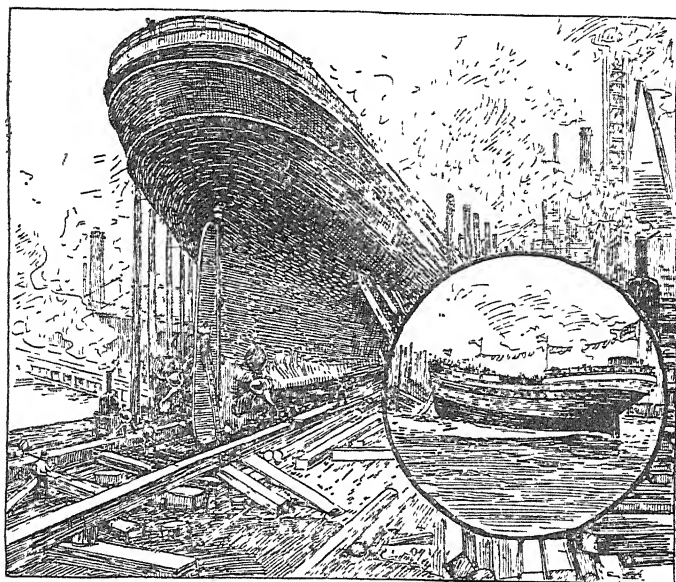
### World's Ship-building Output

In 1922 the total tonnage of all the ships, both sailing vessels and steam-ships, built throughout the world, was about 2,500,000. Of this total British yards turned out more than 1,000,000 tons, or about two-fifths. The ship-building firms on the Clyde produced fewer vessels this year than usual, falling behind the Tyne, where, too, the year's production was much below the average.



Besides the Clyde and Tyne there are great ship-building yards on the Wear, Tees, Lagan, Thames, and Humber, and at Barrow and Birkenhead. The leading single firms are on the Tyne and in Belfast.

The United States comes next to Britain as a builder



Twin-screw Ocean Liner on Stocks - Stern View

A Launch

of ships, but she is surpassed by the Clyde alone. Germany and France are also of great importance in this respect, and some of the finest steamships afloat at the present time were constructed in Germany. The British possessions do not as yet produce many ships. The chief producers are Canada, Hong-Kong, and Singapore.

Steam and sailing ships of the gross tonnage of several

hundred thousand tons are exported annually from Britain to foreign countries. The total value of these, including machinery, is over nine million pounds sterling. They are sent mostly to Japan and to South American countries.

### Shipping of British Ports

The total number of vessels of all kinds that entered the ports of the United Kingdom from foreign countries and British possessions was over 50,000 in a recent year, and their total tonnage was over 40,000,000. One-third of this tonnage represented foreign vessels, and the remaining two-thirds British. The total number of vessels of over 100 tons registered at British ports is about 9,000, with a total tonnage of over 19,000,000. The number of vessels registered at all ports in the empire is about 11,000, with a total tonnage of about 22,000,000. More than eighty per cent of British tonnage represents steamships, but of the tonnage of foreign nations only about seventy per cent is steam.

### The Earnings of British Shipping

Britain not only brings most of her imports in her own vessels, but she also sends out most of her exports in her own vessels, and she carries goods between foreign countries and her colonial possessions in her ships. We have already seen that the payment for these services is made by imports of goods into the United Kingdom. A large part of the excess of the value of her imports over the value of her exports represents the earnings of her shipping.

### Ports of the Empire

The British Empire includes many of the busiest seaports in the world. London, the first port of the empire and of the globe, is visited annually by about 10,000 vessels, with an aggregate tonnage, entered and cleared, of over 20,000,000. After it come, among home seaports, Liverpool, Cardiff, the Tyne ports, Southampton, Glasgow, Hull, Dover, Falmouth, Grimsby, Middlesbrough, Newport, Belfast, and numerous others. The principal seaports of the outlying parts of the empire are Victoria (Hong-Kong) and Singapore, seats of a great transit trade; Gibraltar, Malta, Aden, and Colombo, ports of call on the main route to India and Australia; Calcutta and Bombay, in India; Cape Town, East London, and Durban, in South Africa; Sydney, Melbourne, and Adelaide, in Australia; Montreal, Halifax, and Victoria, in Canada.

# Tabular View of the British Empire

		Area in Sq Miles.	Population
IN EUROPE—			
England and Wales	.	58,000	39,000,000
Scotland		30,000	5,000,000
Northern Ireland	..	5,000	1,300,000
Isle of Man and Channel Islands	... ..	300	200,000
<i>United Kingdom</i>	.	<b>94,000</b>	<b>45,000,000</b>
Irish Free State	.	27,000	3,200,000
Gibraltar	.	2	20,000
Maltese Islands	.	120	220,000
<i>Total in Europe</i>	..	<b>122,000</b>	<b>49,000,000</b>
IN ASIA—			
British India (including Aden, Perm, &c.)		1,100,000	250,000,000
Native States of India		700,000	70,000,000
<i>Indian Empire</i>		<b>1,800,000</b>	<b>320,000,000</b>
Ceylon (including Maldiv Islands)		26,000	5,000,000
Straits Settlements and Dependencies (including Federated Malay States Labuan, &c.)	}	54,000	3,000,000
Bahrem Islands	...	200	100,000
British Borneo	... ..	80,000	1,000,000
Hong-Kong	.	400	500,000
Wei-hai-wei	..	300	200,000
Cyprus		3,600	300,000
Mesopotamia (Iraq), Palestine, and Trans Jordan	... ..	150,000	4,000,000
<i>Total in Asia</i>	... ..	<b>2,000,000</b>	<b>330,000,000</b>
IN AFRICA—			
Egypt (now a Sovereign State)	..	400,000	13,000,000
Anglo-Egyptian Sudan	.	1,000,000	4,000,000
<i>North Africa</i>	.	<b>1,400,000</b>	<b>17,000,000</b>
Somaliland Protectorate	.. ..	70,000	300,000
Kenya	...	180,000	4,000,000
Uganda Protectorate	..	230,000	4,000,000
Zanzibar Protectorate	..	1,000	2,000,000
Tanganyika Territory	.	400,000	8,000,000
<i>East Africa</i>	.	<b>900,000</b>	<b>17,000,000</b>
Nigeria	.	340,000	17,000,000
Gold Coast and Protectorate	..	120,000	2,000,000
Sierra Leone and Protectorate	..	30,000	2,000,000
Gambia and Protectorate	..	5,000	250,000
<i>West Africa</i>	... ..	<b>500,000</b>	<b>21,000,000</b>

Divisions.	Area in Sq. Miles	Population
Rhodesia	450,000	2,000,000
Nyasaland Protectorate	40,000	1,200,000
Union of South Africa	470,000	7,000,000
Basutoland	12,000	500,000
Bechuanaland Protectorate	280,000	150,000
South-West Africa	320,000	300,000
<i>South Africa</i>	<b>1,600,000</b>	<b>11,200,000</b>
Socotra	1,400	1,200
Mauritius and Dependencies	800	400,000
Seychelles	200	27,000
Ascension	40	200
St. Helena and Tristan da Cunha	50	4,000
<i>Total in Africa</i>	<b>4,450,000</b>	<b>65,000,000</b>
<b>IN AMERICA—</b>		
Dominion of Canada	3,500,000	9,000,000
Newfoundland and Labrador	100,000	300,000
<i>North America</i>	<b>3,600,000</b>	<b>9,300,000</b>
Bahamas	4,000	60,000
Jamaica and Dependencies	4,000	1,000,000
Leeward Islands	700	150,000
Windward Islands	500	200,000
Barbados	200	200,000
Trinidad and Tobago	2,000	400,000
<i>West Indies</i>	<b>12,000</b>	<b>2,000,000</b>
British Honduras	8,000	40,000
British Guiana	90,000	300,000
Bermudas	20	20,000
Falkland Islands and South Georgia	8,000	3,000
<i>Total in America</i>	<b>4,000,000</b>	<b>12,000,000</b>
<b>IN AUSTRALASIA—</b>		
Commonwealth of Australia (including Papua, the former German New Guinea, &c.)	3,200,000	6,000,000
Dominion of New Zealand and Depen- dencies, and Samoa	106,000	1,260,000
Fiji Islands	7,000	170,000
Tonga Islands	400	20,000
Gilbert Islands	200	40,000
Other Pacific Islands	700	10,000
<i>Total in Australasia</i>	<b>3,300,000</b>	<b>7,500,000</b>
<b>Total Empire</b>	<b>14,000,000</b>	<b>450,000,000</b>

# Chronological Summary

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- 1486 **Bartholomew Diaz doubled the Cape of Good Hope**  
1492 **Christopher Columbus sailed on first voyage: discovered the Bahamas, Cuba, and Hayti**  
1493. **Columbus sailed on second voyage: discovered Leeward Islands and Jamaica.**  
1497. **Vasco da Gama doubled Cape of Good Hope and sailed to Calicut in India.**  
**The Cabots discovered the mainland of the Canadian Dominion.**  
1498 **Columbus reached South American mainland: discovered St. Vincent, Grenada, and Trinidad.**  
1502. **Columbus sailed on last voyage: discovered St. Lucia coast of British Honduras, &c.**  
1534. **Jacques Cartier's first voyage to North America.**  
1535 **Cartier's second voyage to North America.**  
1541-2. **Cartier's third voyage to North America.**  
1558. **Accession of Queen Elizabeth.**  
1576-7-8. **Sir Martin Frobisher's voyages in search of North-West Passage.**  
1583. **Sir Humphrey Gilbert annexed Newfoundland.**  
1585-6-7. **John Davis's voyages in search of North-West Passage.**  
1588. **Defeat of the Spanish Armada.**  
**A Company authorized to trade to Gambia.**  
1600. **The Charter of the East India Company first granted.**  
1603. **Samuel Champlain's first visit to Canada.**  
**Accession of James I**  
1607. **Virginia colonized.**  
1608. **Champlain founded Quebec.**  
1610. **Henry Hudson's exploration of Hudson Bay**  
1615-6. **William Baffin's voyages in search of North-West Passage.**  
1620. **New England colonized by the Pilgrim Fathers.**  
**Richard Jobson sent to explore the Gambia.**  
1623. **The Massacre at Amboyna.**  
1625. **Accession of Charles I.**  
1629. **Quebec taken by the English (restored, 1632).**  
1639. **Fort St. George (now Madras) founded.**  
1642-3. **Abel Tasman makes his great voyage: discovers Tasmania.**  
**New Zealand, Fiji Islands, Tonga Islands.**  
1649. **Execution of Charles I: Cromwell in power.**

1652. Cape Town founded by Dutch Colonists under Van Riebeeck.
1655. Jamaica taken from the Spanish by an English force.
1660. Charles II becomes king.
1661. Bombay given to Charles II as a dowry by Portugal.
1670. Prince Rupert and others incorporated as the Hudson's Bay Company.
1674. Pondicherry founded by the French in India.
1685. Accession of James II.
1688. Accession of William III.
1696. Fort William (now Calcutta) founded.
- 1699-1700. William Dampier's explorations to the north of Australia.
1702. Accession of Queen Anne.
1704. Gibraltar taken by the British.
1706. Ziegenbalg arrived in India: the first Protestant missionary.
1713. Treaty of Utrecht ends War of Spanish Succession: Britain obtains Newfoundland, Nova Scotia, Gibraltar, &c.
1714. Accession of George I.
1727. Accession of George II.
1745. Louisburg taken by the British Americans (restored by Treaty of Aix-la-Chapelle, 1748).
1746. Madras captured by the French (restored by Treaty of Aix-la-Chapelle, 1748).
1750. Schwarz went to India as missionary.
1751. Robert Clive captured and defended Arcot.
1755. Braddock defeated by the French in America: Washington next in command.  
Expulsion of French settlers from Nova Scotia
1756. "Black Hole" and Clive's capture of Calcutta  
Montcalm became French commander in Canada.
1757. Battle of Plassey.
1758. Louisburg taken by Amherst and Wolfe.
1759. Amherst captured Fort Ticonderoga, &c.  
Wolfe took Quebec.
1760. Masulpatam taken from the French.  
Sir Eyre Coote's victory at Wandewash.  
Canada all in British hands.  
Accession of George III.
1761. Sir Eyre Coote took Pondicherry (restored, 1763).
1763. Treaty of Paris ended Seven Years' War: Canada and India secured to Britain.
1764. Sir Hector Munro's victory over the Mogul Emperor and the ruler of Oude at Buxar.
1765. Stamp Act passed (repealed, 1766).  
James Watt began his improvements in the steam-engine.
- 1766-8. Bougainville's voyage.
1767. Duties on tea, &c., imported into America.

- 1767-8. Wallis's voyage.
- 1767-9. Carteret's voyage.
- 1768-71 **Cook's first voyage**: New Zealand, Australia, &c.
1770. **Bruce in Abyssinia**: reached sources of Blue Nile.  
**Hargreaves' spinning-jenny** patented.
1771. Warren Hastings became governor of Bengal: first governor-general, 1774.
- 1772-5. **Cook's second voyage**: New Caledonia, &c.
1773. Boston "Tea-Party".
1774. Quebec Act passed: end of military rule in Canada.
- 1775 **Beginning of the American Revolution**.
1776. **Declaration of Independence of the United States**.
- 1776-9. **Cook's third voyage**: Sandwich Islands, &c.
- 1777 General Burgoyne surrendered to Americans at Saratoga.
- 1778-81. First Mahratta War.
- 1779 **Crompton's spinning-mule** invented.
- 1779-83. General Elcott (Lord Heathfield) successfully defended Gibraltar.
1780. Colonel Baillie's force annihilated at Perambakam by Hyder Ali's troops.
- 1780-84. First Mysore War.
1781. Lord Cornwallis surrendered at Yorktown to the Americans and French.  
**Sir Eyre Coote** completely defeated Hyder Ali at Porto Novo.
1782. **Rodney** gained a brilliant naval victory in the West Indies over the French admiral De Grasse.
1783. **Treaty of Versailles**: Britain acknowledged independence of United States.
1784. New Brunswick separated from Nova Scotia.
- 1785 **Cartwright's power-loom** patented.
- 1785-8. Lapérouse's voyage.
- 1786-93. Lord Cornwallis governor-general in India.
1788. **Sydney** founded as a convict settlement.  
**Sierra Leone** founded as a settlement for freed slaves.  
Warren Hastings impeached (acquitted, 1795).
1789. Mutiny on the *Bounty*.  
**Sir A. Mackenzie** travels down **Mackenzie River** to Arctic Ocean.
- 1790-2. Second Mysore War.
- 1791-5. **Vancouver's voyage**.
1791. Constitutional Act passed: Ontario made a separate province from Quebec.
- 1792-3. **Sir A. Mackenzie** crossed the **Rocky Mountains**.
1794. William Carey went to India as a missionary.
1795. Cape Town taken by the British (restored, 1802).
- 1795-9. **Mungo Park's first journey on the Niger**.
1796. Ceylon taken from the Dutch.
1797. Trinidad taken by the British.



- 1798-1805. Marquis Wellesley governor-general in India.  
 1798. Bass proved Tasmania to be separate from Australia.  
 1799. **Third Mysore War: Seringapatam taken by Sir David Baird: Tippoo killed.**  
     Baptist mission at Serampur established.  
 1801-3. Matthew Flinders explored the coasts of Australia.  
 1802-4. Second Mahratta War.  
 1803. First settlers (convicts) sent to Tasmania.  
     Wellesley's victory at Assaye: Lake's victory at Laswaree.  
 1805-6. **Mungo Park's last voyage, and death.**  
 1806. **Cape Town finally taken by the British.**  
 1810. **Mauritius taken from the French.**  
 1811. **Lord Selkirk's first effort to colonize Manitoba.**  
 1812-4. War between Britain and the United States.  
 1813. Blue Mountains (N.S.W.) first crossed by the settlers.  
 1814. **Cape Colony and British Guiana sold to Britain by Holland.**  
 1814-23. Marquis Hastings governor-general in India.  
 1815. **Battle of Waterloo.**  
 1817. **Selkirk finally established his colony in Manitoba.**  
     John Williams went as missionary to South Seas  
     Robert Moffatt went as missionary to South Africa  
 1817-8. **Third Mahratta War.**  
 1819. **Singapore ceded to Britain.**  
 1820. First British colonists went to Cape Colony.  
     **Accession of George IV.**  
 1822-5. Clapperton-Oudney-Denham expedition in western Sudan.  
 1824-6. **First Burmese War: Assam annexed.**  
 1825-7. Clapperton-Lander expedition in Nigeria.  
 1826. A. Gordon Laing first to reach Timbuctoo.  
 1828-35. Lord William Bentinck governor-general of India.  
 1829. Colonists settled at Fremantle (Western Australia).  
 1829-30. Sturt discovered Darling and Murrumbidgee rivers.  
 1830. Lander first navigated the Lower Niger to its mouth.  
     **Accession of William IV.**  
 1833. **The Act passed for emancipating slaves in British possessions.**  
 1835. **Melbourne founded.**  
 1836. Colonists settled in South Australia.  
     **Great Trek began.**  
 1837. **Rebellion in Canada.**  
     **Accession of Queen Victoria.**  
 1837-9. Sir George Grey's exploring journeys in north-western Australia.  
 1838. Zulus under Dingaan murdered Retief and many Boers in Natal:  
     routed by the Boers.  
 1839-42. **First Afghan War.**  
 1840. **Union Act passed for Canada.**

1840. **Transportation to New South Wales ceased.**  
**New Zealand first settled by whites.**
- 1840-1. **Eyre's journey along shores of Australian Bight.**
1841. **New Zealand separated from New South Wales.**  
**Livingstone went to Bechuanaland as missionary.**  
**Selwyn became first Bishop of New Zealand**
- 1841-5. **Sir George Grey governor of South Australia.**
1843. **Natal annexed by Britain.**  
**Sind War and annexation of Sind.**  
**New South Wales obtained representative government.**
- 1844-5. **Sturt's expedition towards centre of Australia.**
1845. **Sir John Franklin set out on his fatal voyage in search of North-West Passage.**
- 1845-6. **First Sikh War.**
- 1845-53. **Sir George Grey governor of New Zealand.**
1848. **Leichhardt set out on his last, fatal journey into interior of Australia.**  
**Dunedin (N.Z.) founded by Scottish Free Churchmen.**  
**Orange Colony annexed under name of Orange River Sovereignty:**  
**Boers resisted and were defeated at Boomplaat.**
- 1848-53. **Successful struggle against attempt to send convicts to Cape Colony.**
- 1848-9. **Second Sikh War: ended in annexation of Punjab.**
- 1848-56. **Lord Dalhousie governor-general of India.**
1849. **Livingstone discovered Lake Ngami.**
- 1849-55. **Barth's travels in Sahara and Sudan.**
1850. **Gold discoveries in Australia.**  
**Christchurch (N.Z.) founded by English Churchmen.**
1851. **British interference in Lagos began.**  
**Victoria separated from New South Wales.**  
**Livingstone discovered the Upper Zambesi**
1852. **Second Burmese War: Lower Burma annexed**  
**Representative government granted to New Zealand.**  
**Sand River Convention Transvaal recognized as independent.**
- 1852-6. **Livingstone crossed Africa.**
1853. **M'Clure made the North-West Passage.**  
**Transportation to Tasmania ceased.**
1854. **Bloemfontein Convention: Orange Free State recognized as independent**  
**Cape Colony received representative government.**
- 1854-61. **Sir George Grey governor of Cape Colony.**
1855. **Responsible government granted to New South Wales and Tasmania.**
1856. **Oude annexed.**  
**Responsible government granted to South Australia.**
- 1856-62. **Lord Canning governor-general and viceroy of India.**
1857. **Indian Mutiny broke out.**
- (B 130)

1858. Indian Mutiny finally suppressed by Lord Clyde in Oude, and by Lord Strathnairn in Central India.  
**India transferred from East India Company to direct government of crown.**  
 First Atlantic Cable laid: soon failed.  
 Ottawa chosen as capital of Canada  
**Speke and Burton discovered Lake Tanganyika: Speke saw Victoria Nyanza.**
1859. Queensland separated from New South Wales.  
**Livingstone discovered Lakes Shirwa and Nyassa.**
- 1860-1. Burke and Wills' disastrous expedition across Australia
- 1860-3. **Speke and Grant discovered Victoria Nyanza.**
1861. Patterson became first Bishop of Melanesia.
- 1861-2. M'Douall Stuart crossed Australia from south to north.
- 1861-7. Sir George Grey governor of New Zealand.
1864. Sir Samuel Baker discovered Albert Nyanza.
- 1864-9. Lord Lawrence viceroy of India.
- 1864-88. Sir J. H. Brand president of the Orange Free State.
1866. **First successful Atlantic Cable laid.**
1867. **Dominion of Canada formed by Act of Parliament.**
- 1867-8. Abyssinian War
1868. **Livingstone discovered Lake Bangweolo.**  
**Transportation to Western Australia ceased.**
1869. **Discovery of diamonds in South Africa.**  
**Suez Canal opened.**
1870. Manitoba added to Dominion of Canada: Louis Riel's rebellion and Wolseley's expedition.  
 Hudson's Bay Company bought out by the Dominion.
1871. British Columbia joined the Dominion of Canada.  
 Stanley relieved Livingstone at Ujiji.
1872. Cape Colony granted responsible government.
1873. **Livingstone died in Africa.**  
 Prince Edward Island joined Dominion of Canada.
1874. **Fiji Islands annexed.**  
**Ashanti War.**
- 1874-7. **Stanley crossed Africa and explored the Congo.**
1876. Mackay went to Uganda as missionary.
- 1876-80. Lord Lytton viceroy of India.
1877. **Queen Victoria proclaimed Empress of India.**  
**Transvaal annexed.**
1878. **Cyprus placed under British administration**
- 1878-81. Second Afghan War.
1879. Zulu War.
- 1880-1. **First Boer War: ended by recognition of Transvaal partial independence.**

1882. Arabi Pasha's revolt in Egypt: defeated at Tel-el-Kebir.  
 1882-3. Joseph Thomson's journey through Masailand.  
 1883. Hicks Pasha's army annihilated by the Mahdi in Kordofan.  
 1883-1900. S. J. Paul Kruger president of Transvaal republic.  
 1884. Baker Pasha's force defeated by Mahdists at El-Teb; Graham's victories at El-Teb and Tamai  
     New Guinea annexed: scramble for Africa began.  
     London Convention granted internal independence to South African Republic  
 1885. Khartum taken by the Mahdi, and Gordon killed.  
     Riel's second rebellion in Canada: Riel captured and executed.  
     Canadian Pacific Railway opened.  
 1885-6. Third Burmese War. Upper Burma annexed.  
 1886. Royal Niger Company received its Charter.  
     Socotra annexed.  
     Gold discovered in Witwatersrand.  
 1887. Zululand annexed.  
     Stanley discovered Albert Edward Nyanza and Ruwenzori.  
     First Colonial Conference held.  
 1889. British South Africa Company received its Charter.  
 1890. British protectorate over Zanzibar proclaimed.  
     Western Australia given responsible government.  
 1891. Central Africa Protectorate (now Nyasaland) established.  
 1893. British East Africa Company's territories taken over.  
     Natal received responsible government.  
 1895-6. Jameson Raid into Transvaal.  
 1897. Zululand incorporated in Natal.  
 1898. Mahdism overthrown by Battle of Omdurman.  
 1899-1902. Second Boer War: annexation of the Transvaal and Orange Free State.  
 1900. Royal Niger Company bought out by the Imperial government.  
     Protectorate proclaimed over Tonga Islands.  
 1901. Commonwealth of Australia proclaimed.  
     Accession of Edward VII.  
 1902. Assuan dam completed and opened.  
     Railway from Mombasa to Victoria Nyanza completed.  
 1901. Anglo-French Convention dealing with Egypt, Newfoundland, &c.  
 1905. The protectorates transferred to the Colonial Office.  
     New Canadian provinces formed: Alberta and Saskatchewan.  
     Indian province of Eastern Bengal and Assam formed.  
 1906. Transvaal granted responsible government.  
 1907. Orange Free State granted responsible government.  
     Imperial Conference permanently constituted.  
 1909. Union of South Africa constituted.  
 1910. Accession of George V.

1911. Coronation. Delhi Durbar. Delhi made capital of India.
1912. Italy takes Tripoli. First Balkan War (Serbia, Bulgaria, Greece, and Montenegro against Turkey). Germans send gunboat to Agadir. France gives Germany part of the French Congo
1913. Treaty of London signed on 30th May, 1913. Second Balkan War begins 1st June. Treaty of Bucharest. Irish Home Rule Bill. Ulster Unionist Council formed.
1914. Threatened Civil War in Ireland. Murder of the Arch-Duke Franz Ferdinand at Sarajevo. Austrian Ultimatum to Serbia. Germany declares War on Russia and on France. Invasion of Belgium. Britain declares War on Germany. Retreat from Mons. Victory of the Marne. Trench Warfare First Battle of Ypres. German Naval defeat at Falkland Islands. Russian defeat at Tannenberg Egypt declared a Protectorate.
1915. British Naval victory off Dogger Bank Second Battle of Ypres. Battle of Dommajetz. Zeppelin raids. Battle of Festubert. Surrender of German South-West Africa to Botha. Battle on the San. Unsuccessful Dardanelles Expedition *Lusitania* sunk. Italians join Entente Bulgaria joins Central Powers. Serbia overrun by Austro-Germans and Bulgars. Fighting at Kut.
1916. Russian successes on the Styra and the Strypa. Germans attack Verdun. Air raids by Germans Sinking of Hospital Ships. Dublin fighting. Fall of Kut. Battle of Jutland. Lord Kitchener drowned. Battle of the Somme Russian defeat at Baranovitchi. Italians seize much of the Carso Zeppelin raids on London and the Eastern Counties. Russian success near Halicz Rumania joins Entente. Lloyd George becomes Prime Minister. British victories in German East Africa. Germans, Austrians, Bulgars, and Turks overrun Rumania.
1917. Unrestricted submarine warfare Germans surrender in East Africa. American steamer *Housatonic* sunk Rumanians defeated Russian revolution. British occupy Bagdad. Russian defeat at Baranovitchi. Turks defeated at Gaza United States declare War on Germany Hospital ships torpedoed Repulse raids by British and French airmen Palestine command taken over by General Allenby Lenin seizes authority in Russia. Italian defeat at Caporetto Battle of Cambrai (1917). Capture of Jerusalem.
1918. Brest-Litovsk Treaty imposed on Russia. Capture of Jericho. German advance in the West. Drive towards Ypres. The Drive towards Paris. Allies recover Soissons; break Hindenberg Line; wipe out St. Mihiel salient, drive Germans from Coast of Belgium. Austrian collapse; sign Armistice on 3rd November. Bulgarians defeated. Bulgarians sign Armistice, 29th September. Surrender of Turkish Fourth Army, Armistice signed, 3rd October. Germans sign Armistice, 11th November
1919. Peace terms signed by Germany, 28th June

## Empire-Builders, &c.

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**Arabi, Ahmed**, an Egyptian soldier and revolutionary leader; born in 1839, defeated at Tel-el-Kebir by Sir G. Wolseley in 1882; was banished to Ceylon, 1883, but allowed to return to Egypt, 1901.

**Baffin, Willham**; pilot on a North-West Passage expedition, 1615; killed while assisting the Persians to expel the Portuguese from Ormuz, 1622.

**Baird, Sir David**; born, 1757, took part in second Mysore war and captured Pondicherry, 1793, had a command in third Mysore war and stormed Seringapatam, 1799; commanded an Indian force against the French in Egypt, 1801-02, lieutenant-general, 1805, recaptured Cape of Good Hope, 1806; served as second in command with Sir John Moore in Spain, 1808, and wounded at Corunna, died, 1829.

**Baker, Sir Samuel White**; born in London, 1821; explored Abyssinian head-waters of the Nile, 1861-62; started up the Nile from Khartoum, 1862, and met Speke and Grant at Gondokoro, 1863; reached Albert Nyanza, 1864, back in England, 1865, knighted, 1866; governor-general of the Egyptian Sudan, 1869-73; died in Devonshire, 1893.

**Baker, Valentine**; born, 1827; served in the Kaffir war, 1852-53; served in the Crimean war; served on the Turkish side in the Russo-Turkish war of 1877-78; entered the Egyptian army, 1882; defeated by Osman Digna at El Teb, 1884, died in Cairo, 1887.

**Barth, Heinrich**; born in Hamburg, 1821; travelled extensively in Sahara and Sudan, 1849-55, died in Berlin, 1865

**Bass, George**; born in Lincolnshire; appointed surgeon to H.M.S. *Reliance*, which was ordered to Sydney, 1795; discovered Bass's Strait and circumnavigated Tasmania; died about 1812.

**Bentinck, Lord William Cavendish**; born, 1774; governor of Madras, 1803-07; served in battle of Corunna, 1809; governor-general of India, 1828-35; financial reforms; suttee made criminal, 1829; Thugs suppressed; died in Paris, 1839.

**Bligh, William**; born, 1754, served under Cook in his second voyage, and discovered the bread-fruit on Tahiti, commanded the *Bounty* in an expedition to obtain bread-fruit plants, 1787; crew mutinied, 1789, and cast him and some others adrift in an open boat; arrived in England.

1790; made another voyage for same purpose, 1791; died in London. 1817.

**Brand, Sir John Henry**; born at Cape Town, 1823; practised as advocate in South Africa; member of first Cape Parliament, 1854; elected president of Orange Free State, 1864, and held the post till his death; knighted, 1886; died at Bloemfontein, 1888.

**Brock, Sir Isaac**, "the hero of Upper Canada"; born in Guernsey, 1769; entered the army, 1785; served in Holland, 1799, and at battle of Copenhagen, 1801; served in Canada, 1802-05; commanded in Upper Canada, 1810; major-general, 1811; on outbreak of war of 1812-14 with the United States, he forced surrender of General Hull in Detroit, 1812; Knight of the Bath, 1812; killed in a fight with Van Rennselaer's army, 1812.

**Bruce, James**; born in Stirlingshire. 1730; African explorer; consul at Algiers, 1763-65; visited Syria, and reached Egypt, 1768; sailed up the Nile to Assuan, reached shore of Red Sea, landed at Massowa, 1769; reached Gondar, capital of Abyssinia, 1770; reached the sources of the Blue Nile; left Gondar, 1771; died of a fall, 1794.

**Burke, Robert O'Hara**, born in county Galway, 1820; joined Irish constabulary, 1848; emigrated to Australia, 1853; appointed to command Victorian government's expedition for the crossing of Australia, 1860; succeeded in crossing, but died of starvation on return journey with all his party except one, 1861.

**Burnes, Sir Alexander**; born at Montrose, 1805; sent on a mission to Cabul, 1836; accompanied British expedition to Afghanistan as second political officer, 1839, murdered by the Afghans, 1841.

**Cabot, John**, a Venetian; settled in Bristol about 1472; sailed from Bristol in service of Henry VII, 1497, and discovered mainland of North America, &c.; died about 1498.

**Canning, Charles John, Earl**, third son of George Canning, the statesman; born near London, 1812. governor-general of India, 1856-62, the mutiny occurring during his term of office; created Earl Canning, 1859. first viceroy of India. died in London, 1862.

**Carteret, Philip**, sailed with Wallis on a voyage round the world, 1767, got separated from Wallis in Straits of Magellan, crossed the Pacific to the Philippines and Celebes; sailed thence round the Cape of Good Hope, reaching England, 1769, died at Southampton, 1796.

**Cartier, Jacques**; born at St. Malo, France, 1491, first and most noted of French explorers of North America; died, 1557.

**Cavagnari, Sir Pierre Louis Nojickan**, born, 1841; son of a French general, naturalized in Britain, 1857, served in suppression of the mutiny in Oude, 1858-59; negotiated treaty of Gandamak with the Afghans, 1879, and went to Cabul as resident; K.C.B., 1879, murdered by the Afghans, 1879.

**Champlain, Samuel**; born, 1567; father of French colonization in Canada, founded Quebec, 1608; discovered Lake Champlain; died, 1635.

**Chelmsford, Frederick Augustus Thesiger, second Baron**; born, 1827; served in Crimean war, suppression of Indian mutiny, and the Abyssinian war (1867-68); succeeded to father's peerage, 1879; commander-in-chief in Zulu war, 1879; became general, 1888; died 1905.

**Clive, Robert, Baron**; born near Market Drayton, Shropshire, 1725, went to Madras as writer in service of East India Company, 1743, captured Arcot, 1751; captured Calcutta from Surajah Dowlah after the "Black Hole", 1756; won battle of Plassey, 1757; governor of Bengal, 1757-60, again governor of Bengal, 1765; reformed the administration; committed suicide, 1774.

**Clyde, Sir Colin Campbell, Baron**; born, 1792; served in China, 1842-46; arrived in India, 1847; distinguished himself at Chillianwalla and Gujerat, in second Sikh war, 1849; served with distinction in the Crimea, 1854-56; appointed commander-in-chief in India on outbreak of mutiny, 1857; relieved Outram and Havelock in Lucknow, 1857, recaptured Lucknow and pacified Oude, 1858; created Baron Clyde, 1858; field-marshal, 1862; died, 1863; buried in Westminster Abbey.

**Colley, Sir George Pomeroy**; born in county Dublin, 1835; entered army, 1852; served in China, Ashantiland, and India; chief of staff in Zulu war, 1879, governor of Natal, 1880; defeated by Boers at Laing's Nek and Ingogo, 1881; defeated and killed on Majuba Hill, 1881.

**Columbus, Christopher**; born at Genoa, 1446 or 1447; set out on first voyage to New World from Palos, 1492, discovered Bahamas, Cuba, Hayti, and arrived back in Spain, 1493; made several other voyages of discovery to the New World; died at Valladolid, 1506.

**Cook, James**; born in northern Yorkshire, 1728; entered navy as able seaman, 1755; surveyed the St. Lawrence, 1759; surveyed coasts of Newfoundland and Labrador, 1763-67; sailed in *Endeavour* for Tahiti to observe transit of Venus, 1768; charted coasts of New Zealand and east coast of Australia; arrived back in England, 1771; sailed in the *Resolution* to disprove existence of Antarctic continent, 1772; sailed along the outer edge of Antarctic ice-fields, visited many Pacific islands; explored New Hebrides and discovered New Caledonia; home by Cape of Good Hope, 1775; had kept his crew practically free of disease; sailed on third voyage, 1776, to find North-West Passage from the Pacific side; doubled Cape of Good Hope and went by Tasmania and New Zealand to Sandwich Islands, which he discovered; surveyed North American coast well to the north, but had to leave the passage undiscovered; returned to Sandwich Islands; killed by the natives, 1779.

**Coote, Sir Eyre**; born in Limerick county, 1726; commanded a division at the battle of Plassey, 1757; defeated the French at Wandewash, 1760;



captured Pondicherry, 1761; commander-in-chief in Madras, 1769; commander-in-chief in India, 1779; completely defeated Hyder Ali in the battle of Porto Novo, 1781, and in subsequent battles, thus saving Madras; died at Madras, 1783.

**Cornwallis, Charles, first Marquis**; born in London, 1738; capitulated to the American insurgents at Yorktown, Virginia, 1781, governor-general in India, 1786, internal reforms, second Mysore war against Tippoo, 1790-92; created marquis, 1792; suppressed Irish rebellion, 1798; went to India again as governor-general, 1805; died at Ghazipur, 1805.

**Cromer, Sir Evelyn Baring, first Earl**; born in Norfolk, 1841; commissioner of the Egyptian public debt, 1877-79; controller-general in Egypt, 1879, agent and consul-general in Egypt, 1883-1907; created baron, 1892; viscount, 1898, earl, 1901; died, 1917.

**Dalhousie, Sir James A. B. Ramsay, first Marquis of**; born at Dalhousie Castle, near Edinburgh, 1812, governor-general of India, 1848-56; second Sikh war, 1848-49, and annexation of Punjab, 1849; introduced railways and telegraphs into India, second Burmese war and annexation of Lower Burma, 1852; annexed Oude because of maladministration, 1856; died at Dalhousie Castle, 1860.

**Dampier, William**; born near Yeovil, Somerset, 1652; engaged in buccaneering and piracy in America, 1679-86; crossed the Pacific to Guam, in the Ladrone Islands, went thence to Philippines, 1686; sailed thence, escaping from captivity in Sumatra, and reached England, 1691; sailed on a government exploring voyage, 1699, doubled Cape of Good Hope and reached Australia; surveyed New Britain Island, published his "Voyage Round the World", 1697, and a "Discourse of Winds", 1699; died in London, 1715.

**Davis, John**; born near Dartmouth, about 1550; voyaged in search of North-West Passage, 1585, 1586, 1587, discovered Davis Strait and explored Baffin Bay, killed by Japanese pirates near Singapore, 1605.

**Diaz, Bartholomew**, a Portuguese navigator; doubled the Cape of Good Hope, 1487, served under Vasco da Gama, 1497; lost in a storm, 1500.

**Durham, John George Lambton, first Earl of**; born in London, 1792; took a leading part in drafting and supporting the Reform Bill of 1831-32; made Earl of Durham, 1833, made high commissioner for the settlement of rebellious Canada, 1838, completed his "Report on the Affairs of British North America", 1839; died at Cowes, 1840.

**Eyre, Edward John**; born, 1815; went to New South Wales and became sheep farmer, 1833, explored the difficult country along the shore of the Australian Bight, 1840-41; lieutenant-governor of New Zealand, 1846-53; lieutenant-governor of St. Vincent, 1854-59; governor of Jamaica, 1862-66; suppressed negro rebellion, 1865; recalled; died in England, 1901.

**Flinders, Matthew**; born in Lincolnshire, 1774; entered navy, 1790;

associated with Bass in exploring coasts of Australia and Tasmania from 1795, made a thorough survey of the south coast of Australia and of part of the north coast, 1801-03, on way home made prisoner in Mauritius by the French governor and detained till 1810; died, 1814.

**Franklin, Sir John**, born in Lincolnshire, 1786; at battle of Trafalgar, 1805; made his first polar expedition, 1818, went in command of *Ernby* and *Terror* in search of North-West Passage, 1845; the whole party perished, some forty search expeditions sent out.

**Frere, Sir Henry Bartle Edward**; born in Brecknockshire, 1815; knighted for services during mutiny, 1859; governor of Bombay, 1862; appointed governor of Cape Colony and high commissioner in South Africa, 1877; chiefly responsible for the Zulu war, recalled, 1880, published correspondence relating to his recall, 1881, died, 1884; buried in St. Paul's Cathedral.

**Frobisher, Sir Martin**; born about 1535; connected with search for North-West Passage, 1576; commanded a ship against the Armada, 1588, knighted, 1588, served under Hawkins, 1590; died at Plymouth from a wound received in a sea-fight, 1594.

**Gama, Vasco da**; born in Portugal about 1469, sailed from Lisbon in 1497, doubled the Cape, sailed up East African coast, crossed to Calicut, in India, arriving in 1498: died at Cochin, 1525.

**Gilbert, Sir Humphrey**, step-brother of Sir Walter Raleigh; born about 1539, obtained a charter from the queen for discovery and colonization, 1578, sailed for and reached Newfoundland, 1583, and took possession of it in the name of Elizabeth; lost at sea on return voyage, 1583.

**Goldie, Sir George Taubman**; born in Isle of Man, 1846; founder of Nigeria; President of Royal Geographical Society.

**Gordon, Charles George**; born at Woolwich, 1833; served with distinction in the Crimean war, commanded a force for suppression of Taiping rebels, 1863-64; went to Egypt as governor of the equatorial provinces, 1874; made great improvements and resigned, 1876; returned in 1877 as governor-general of the Sudan; directed his efforts to suppressing slave-trade; sent to withdraw the garrisons from the Sudan, 1884; besieged in Khartoum by the Mahdi, killed in January, 1885, before the relieving force arrived.

**Gough, Sir Hugh, first Viscount**; born, 1779; commanded in China war of 1841-42; created a baronet, commander-in-chief in India, 1843; commanded in first Sikh war, 1845-46, in which he gained the victories of Mudki, Ferozeshah, and Sobraon; created Baron Gough, 1846; commanded in second Sikh war, 1848-49; fought the hardly-contested battle of Chillianwalla, 1849; superseded by Napier, but won the decisive battle of Gujerat, 1849, before his arrival; died 1869.

**Graham, Sir Gerald**; born in Middlesex, 1831; gained the Victoria

Cross in the Crimean war; served under Wolseley against Arabi, 1882; defeated Arabs in second battle of El Teb, and in battle of Tamai, 1884; lieutenant-general, 1884; died in Devonshire, 1899.

**Grant, James Augustus**; born at Nairn, 1827; accompanied Speke in expedition of 1860-63; served in Abyssinian war, 1868; left army, 1868; died at Nairn, 1892.

**Grey, Sir George**; born, 1812; conducted exploring expeditions in Western Australia, 1837-39; governor of South Australia, 1841-45; governor of New Zealand, 1845-53; governor of Cape Colony, 1854-59; recalled for raising the federation question, but again governor, 1859-61; governor of New Zealand, conducted second war against Maoris, 1861-67; entered into New Zealand politics, 1874; prime minister of New Zealand, 1877-79; settled in London, 1894; died, 1898.

**Hastings, Francis Rawdon, first Marquis of**; born, 1754; fought in American war, governor-general in India, 1814-23; war against Nepaul, 1814-15; suppressed Pindaris, 1817; third and final Mahratta war, 1817-18, created Marquis of Hastings, 1817; secured the cession of Singapore, 1819; died on board H.M.S. *Revenge*, off Naples, 1826.

**Hastings, Warren**; born, 1732; went to Calcutta in 1750; resident at nawab's court at Murshidabad, 1757-60; returned to India as a member of the Madras council, 1769; governor of Bengal, 1772; greatly improved the administration; first Mahratta war, 1778-81, war against Hyder Ali in Mysore, 1780-84, impeached for corruption and cruelty, 1788, acquitted, 1795, died at Daylesford, Worcestershire, 1818.

**Havelock, Sir Henry**; born near Sunderland, 1795, was with Sale in Jeldahab and went to Cabul with Pollock; present at battles of Mudki, Feroze-shah, and Sobraon in first Sikh war, 1845-46; had a command in the Persian war of 1857; on the outbreak of the mutiny recaptured Cawnpore after much fighting, 1857, major-general, 1857, with Outram effected first relief of Lucknow, 1857, aided Sir Colin Campbell in final relief, 1857; died in Lucknow, 1857.

**Hicks, William**; born, 1830; served in Abyssinian war, 1867-68; commanded an Egyptian force against the Mahdi, 1883, betrayed into an ambush and his force massacred, 1883.

**Hudson, Henry**; born probably before 1570; attempted to find North-East Passage, 1608; sailed in search of North-West Passage, 1610; examined Hudson Strait and Bay; sent adrift by mutinous crew and lost, 1611.

**Joubert, Piet**; born, 1831; defeated Sir George Colley at Lang's Nek, Ingogo, and Majuba; chief Boer commander at outbreak of South African War, 1899; died, 1900.

**Kitchener, Sir Horatio Herbert, first Viscount**; born in Ireland, 1850; commanded the Egyptian cavalry, 1882-84; served in Nile expedition of

1884-85; governor of Suakim, 1886-88; adjutant-general of the Egyptian army, 1888-92; Sirdar of the Egyptian army, 1890, began advance up Nile for recovery of Sudan, 1896; routed Khalfah's forces at Omdurman, 1898; chief of staff to Lord Roberts in South African war, 1900; commander-in-chief in South Africa, 1900-02, till end of war; commander-in-chief in India, 1902; created viscount, 1902; made Secretary of State for War in 1914, appeal to country, creation of Kitchener's Army as new force was called; sailed for Russia in June, 1916, to arrange re arming of Tsar's forces; cruiser struck mine off the Orkenays; Kitchener drowned.

**Lake, Gerard, first Viscount;** born, 1744; commander-in-chief in India 1800, gained brilliant victory at Laswaree, 1803, created Baron Lake, 1804, created Viscount after return to England, 1807; died in London, 1808.

**Lawrence, Sir Henry Montgomery;** born in Ceylon, 1806; took part in Cabul expedition, 1842; British resident in Nepal, 1843-46; governor-general's agent in the Punjab, 1846, British resident at Lahore, 1847; president of the Punjab board of administration, 1849; agent in Rajputana, 1853, chief commissioner in Oude, 1856: killed in 1857 at siege of Lucknow.

**Lawrence, John Laird Mair, first Baron;** born at Richmond, Yorkshire, 1811, entered the Company's service, 1830; chief commissioner of the Punjab, 1853; supplied troops and stores from the Punjab for the recapture of Delhi in the mutiny, viceroy of India, 1864-69; created Baron Lawrence, 1869; died, 1879.

**Leichhardt, Friedrich Wilhelm Ludwig;** born in Prussia, 1813; went to New South Wales for the purpose of scientific investigation, 1841; explored a large part of Queensland, 1844-45; made an attempt to explore interior desert, 1846-47; made a third journey, 1847; set out to cross the Australian continent from east to west, 1848, but perished; no trace of him found

**Livingstone, David,** born at Blantyre, Lanarkshire, 1813; entered service of the London Missionary Society, 1838; became a qualified physician, 1840; sailed for Cape Town, 1840; discovered Lake Ngami, 1849, discovered the upper Zambesi, 1851; made a journey from Cape Town to Zambesi, thence west to Loanda on the coast, and then east down Zambesi to Indian Ocean, 1852-56; discovered Lakes Shirwa and Nyassa, 1859; started on another exploring expedition, 1866; discovered Lake Bangweolo, 1868; arrived at Ujiji, on eastern shore of Lake Tanganyika, 1869; relieved by Stanley, 1871; died near Bangweolo, 1873; body brought to coast by native servants and buried in Westminster Abbey.

**Lytton, Edward Robert Bulwer, first Earl of,** son of Lord Lytton, the novelist, born in London, 1831; viceroy of India, 1876-80; proclaimed Queen Victoria Empress of India at Delhi in 1877; responsible for second Afghan war, 1879; died in Paris, 1891.

**McClintock, Sir Francis Leopold**; born in Dundalk, 1819; discovered fullest particulars of Franklin's fate, 1859; died in London, 1907.

**McClure, Sir Robert John Le Mesurier**; born at Wexford, 1807; engaged in search for Franklin, 1850-54; discovered North-West Passage from Pacific side, 1854; died in London, 1873.

**Mackenzie, Sir Alexander**; born at Inverness about 1755; journey down Mackenzie River, 1789, across the Rockies to the Pacific, 1792; knighted, 1802; died near Dunkeld, 1820.

**Mackenzie, William Lyon**; born in Dundee, 1795, emigrated to Canada, 1820, associated with Papineau in organizing the 1837 rebellion; returned to Canada, 1849; again elected to the legislature; died in Toronto, 1861.

**Macnaghten, Sir William Hay**; born, 1793; envoy to Cabul, 1838; murdered by the Afghans, 1841.

**Mayo, Richard Southwell Bourke, sixth Earl of**; born in Dublin, 1822; three times chief secretary for Ireland; viceroy of India, 1869; assassinated at Port Blair, in the Andaman Islands, 1872.

**Mohammed Ahmed**, usually called **the Mahdi**; born in Dongola, 1844; proclaimed himself a mahdi, and began to rouse the Sudan to revolt against Egypt, 1881; captured El Obeid in Kordofan, 1883, annihilated Hicks Pasha's army at Kashgila, 1883; Khartoum besieged and taken, January, 1885; died in June, 1885.

**Montcalm, Louis Joseph, Marquis de**; born, 1712; commander of the French troops in Canada, 1756; lieutenant-general, 1758, attempted to confine British to coast-lands; plan frustrated by Amherst and Wolfe; killed in the battle of Quebec, 1759.

**Munro, Sir Hector**; born in Cromartyshire, 1726; gained the victory of Buxar in 1764, thus saving Bengal; captured Pondicherry, 1778; commanded a division under Sir Eyre Coote at Porto Novo, 1781, captured Negapatam, 1781; died, 1805.

**Napier, Sir Charles James**; born, 1782; wounded and taken prisoner in battle of Corunna, 1809; served in war with United States, 1813; went to India, 1841; commander in Sind war, won the battle of Miani, 1843; had a slight share in the first Sikh war, 1846, died, 1853.

**Nicholson, John**; born in Dublin, 1821; distinguished in battles of Chillianwalla and Gujerat, in second Sikh war, 1849; on outbreak of mutiny became brigadier-general and commander of the Punjab movable column; gained a notable victory over rebels before Delhi, commanded the storming party which took Delhi, but fell mortally wounded, 1857.

**Nott, Sir William**; born, 1782, had a command in southern Afghanistan in first Afghan war; advanced from Candahar to Cabul to meet Pollock, 1842; afterwards resident at court of Lucknow; died in London, 1845.

**Outram, Sir James**, "the Bayard of India"; born, 1803; served with Napier in the Sind war, 1843; resident in state of Baroda, 1847-51; resident in

Oude, 1854; recommended annexation of Oude, 1855; commander-in-chief in Persian war, 1857; commanded two divisions between Calcutta and Cawnpore at outbreak of mutiny; carried out the evacuation of Lucknow on Campbell's arrival; co-operated with Campbell in final capture of Lucknow, 1858; left India, 1860, died at Pau, France, 1863; buried in Westminster Abbey.

**Park, Mungo**; born near Selkirk, 1771; studied medicine; made a voyage as surgeon to Sumatra, 1792, sailed from England to explore the Niger on behalf of the African Association, 1795, went up the Gambia and reached Sego, on the Niger, 1796; imprisoned by an Arab chief, but escaped, and went farther down river; returned to England, 1799; practised as a doctor in Peebles, 1801-03; left on a second journey to explore Niger, 1805, sailed down Niger past Timbuctoo to Bussa, where he was killed in a fight with natives, 1806.

**Pollock, Sir George**; born, 1786; served under Lake in the second Mahratta war, 1801-05, served in first Burmese war, 1824-26, major-general, 1838; in first Afghan war relieved Jelalabad and advanced to Cabul, where he was joined by General Nott from Candahar, 1842; died at Walmey, 1872, buried in Westminster Abbey.

**Rhodes, Cecil John**; born, 1853; sent to South Africa for sake of health, 1871, made a fortune at Kimberley diamond mines; studied at Oriel College, Oxford; forced to return to Africa for his health, 1873; spent some three years in diamond-mining; entered Cape Parliament, 1881; saved Bechuanaland from being seized by Boers, 1884; secured a large share in the Rand gold-fields, 1886; formed the British South Africa Company, and occupied Rhodesia, 1889; became premier of Cape Colony, 1890, resigned his premiership, 1896; brought about settlement of Matabele rising, 1896; helped to defend Kimberley, 1899 to 1900, died at Cape Town, 1902.

**Riebeeck, Jan Anthony Van**; led first party of Dutch colonists to the Cape in 1652; left the Cape, 1662.

**Riel, Louis**, a Canadian half-breed, born in Manitoba, 1844, headed the rebellion which was crushed by Wolseley's Red River expedition, 1870; fled to United States; again headed rebellion of Indians and half-breeds in 1885; rebellion suppressed and Riel captured; found guilty of treason, and executed, 1885.

**Roberts, Sir Frederick Sleigh, first Earl**; born at Cawnpore, 1832; served in suppression of the mutiny, and gained Victoria Cross, made a famous march from Cabul to Candahar, 1880, and completely defeated Ayub Khan; commander-in-chief in Madras, 1881-85; commander-in-chief in India, 1885-93, general, 1890; commander-in-chief in South African war, 1899-1900; relieved Kimberley, 1900; secured the surrender of Cronje and his men, 1900; occupied Bloemfontein, Johannesburg, and Pretoria, 1900; resigned command to Kitchener, 1900; commander-in-chief in Britain, 1901-04, created earl, 1901; died at St Omer, 1914.

**Rodney, Sir George Brydges, first Baron;** born, 1719; reduced Martinique, West Indies, 1762, and captured also St. Lucia, Grenada, and St. Vincent; defeated Spanish fleet off Cape St. Vincent, 1780; sent to West Indies with his fleet; captured island of St. Eustatius, 1781; resigned command to Hood, 1781, returned to West Indies, 1782; gained great victory over Comte de Grasse, 1782; created Baron Rodney, 1782; died, 1792.

**Rose, Sir Hugh Henry, Baron Strathnairn;** born, 1801; distinguished in battles of Alma and Inkerman, major-general, 1854; volunteered to serve in India on outbreak of mutiny; suppressed the mutiny in Central India, especially by the capture of Jhansi, Kalpi, and Gwahor, 1858; commander-in-chief in Bombay, 1860; created Baron Strathnairn, 1866; died, 1885.

**Rupert, Prince,** nephew of Charles I; born in Prague, Bohemia, 1619; fought on Charles's side in Civil war, 1642-46; returned to England at Restoration, 1660, commanded in naval wars against the Dutch; received charter for Hudson's Bay Company, 1670; first lord of the Admiralty, 1678-79; died in London, 1682.

**Sale, Sir Robert Henry;** born, 1782, served under Baird in third Mysore war, and shared in the storming of Seringapatam, 1799; took part in expedition against Mauritius, 1810; had a command in first Burmese war, 1824-26; occupied Jelalabad, 1841; defended Jelalabad skilfully till relieved by Pollock, 1842; served under Gough in first Sikh war; severely wounded in battle of Mudki, 1845, and died from the effects a few days later.

**Selkirk, Thomas Douglas, fifth Earl of;** born in Kirkcudbrightshire, 1771; settled emigrants on Prince Edward Island, 1803; obtained almost complete control of Hudson's Bay Company, 1810; first party of emigrants sent to the Red River Valley, 1811; driven out of the settlements, Forts Douglas and Daer, by men of the North-West Fur Company, 1815 and 1816; re-established his colony, 1817; died at Pau, France, 1820.

**Smith, Sir Harry George Wakelyn;** born in Cambridgeshire, 1788; fought at Waterloo, 1815; had an appointment in Jamaica, 1826-28; got a similar military appointment in Cape Colony, 1828; second in command in Cape Colony, 1835; fought against Kaffirs; made a baronet, 1846; became governor of Cape Colony, 1847; defeated Boers under Pretorius at Boomplaat, 1848, suppressed a Kaffir rebellion, 1850-52; recalled, 1852, lieutenant-general, 1854; died in London, 1860.

**Speke, John Hanning,** born in Somersetshire, 1827, associated with Sir Richard Burton in an attempt to explore Somaliland, 1854-55; joined Burton in another exploring expedition in Africa, 1856; they discovered Lake Tanganyika, 1858; Speke discovered Victoria Nyanza, 1858; set out on another journey with J. A. Grant, 1860; went from Zanzibar through Uganda and down Nile, verifying his former view that Victoria Nyanza

was source-lake of the Nile; met Baker at Gondokoro, 1863; reached England, 1863; accidentally shot himself, 1864.

**Stanley, Sir Henry Morton**; born near Denbigh, Wales, 1841; served in Confederate army and afterwards in Federal navy during American civil war; sent by proprietor of *New York Herald* to find Livingstone, 1870; met Livingstone at Ujiji, on Lake Tanganyika, 1871; started from Zanzibar, 1874; explored Victoria Nyanza and Tanganyika, and descended Congo to its mouth; aided in organizing the Congo Free State, 1879-84; led an expedition for the relief of Emin Pasha, 1887; discovered Albert Edward lake, Semliki river, and Ruwenzori mountains; a member of parliament, 1895-1900; created G.C.B., 1899; died, 1904.

**Stewart, Sir Donald Martin**; born, 1824; brigadier-general in Abyssinian expedition, 1868; commanded Quetta army in second Afghan war, 1878; occupied Candahar, made famous march to Cabul and took over command from Roberts, 1880; died in Algiers, 1900.

**Stewart, Sir Herbert**, born in Hampshire, 1843; served under Colley and made prisoner at battle of Majuba, 1881; served under Wolseley against Amba, 1882; served under Graham at El Teb and Tamai, 1884, joined Wolseley's force for relief of Khartoum, 1884; commanded the desert column which left main force at Korti; fought a successful action at Abu Klea wells, mortally wounded three days later, 1885.

**Stuart, John McDouall**, born at Dysart, Fife, 1815; emigrated to South Australia, 1838, became a surveyor; accompanied Sturt's 1844 expedition into the interior of Australia; first led an expedition into the interior, 1858; first to reach the centre of Australia, 1860, crossed the continent from south to north, 1861-62; went to England, 1864; died in London, 1866.

**Sturt, Charles**; born in India, 1795; began exploring in New South Wales, 1828; discovered Darling river, 1829; sailed down the Murray to Lake Alexandrina and up again, 1830; left army, 1833; entered service of South Australian government, 1839; led an exploring expedition into the desert interior, 1844-45; retired from service of South Australia, 1851; died at Cheltenham, 1869.

**Tasman, Abel Janszoon**; born in Holland, 1602 or 1603; discovered Tasmania and called it Van Diemen's Land, after governor of Batavia; discovered South Island, New Zealand; discovered Tonga Islands and Fiji Islands, 1643; made another voyage, to north coast of Australia, 1644; died in Batavia, 1659.

**Thomson, Joseph**, born in Dumfriesshire, 1858; appointed geologist and naturalist to an exploring expedition under A. Keith Johnston, 1878; became leader on Johnston's death, reached Lake Tanganyika, and returned, 1880; led expedition through the country of the Masai, 1882-83; led a political expedition to Nigeria, 1885; explored the Atlas Mountains, 1888; conducted an expedition on behalf of the British South Africa Company, 1890-91; died in London, 1894.



**Vancouver, George**; born, 1758; served in Cook's second and third voyages; present at Rodney's victory in West Indies, 1782; sailed on an exploring voyage, 1791; surveyed south-west coast of Australia; examined coasts of New Zealand; went by way of Tahiti to Strait of San Juan, on American coast; circumnavigated Vancouver Island; carefully explored the American coast-line; returned to England, round Cape Horn, 1795; died in Surrey, 1798.

**Wallis, Samuel**; born, 1728; sailed in command of *Dolphin* on a voyage round the world, 1767; separated from Carteret in Straits of Magellan; explored Paumotu Islands, Society Islands, &c., and returned to England by way of Java and the Cape of Good Hope, 1768; died in London, 1795.

**Washington, George**; born in Virginia, 1732; served against the French in America from 1754; commander-in-chief of the American forces in the rebellion, 1775; secured the triumph of the Americans by the surrender of Cornwallis's force at Yorktown, 1781; first president of the United States, 1789-97; died, 1799.

**Wellesley, Richard Colley, Marquis**; born at Dangan Castle, Meath, 1760; appointed governor-general in India, 1797; secured friendship of Nizam of Haidarabad; third Mysore war, 1799, with capture of Seringapatam and death of Tippoo; created Marquis Wellesley in Irish peerage, 1799; second Mahratta war, 1802-04; recalled, 1805; lord-lieutenant of Ireland, 1821-28 and 1833-34; died, 1842.

**Wellington, Sir Arthur Wellesley, first Duke of**, younger brother of the Marquis Wellesley; born in Dangan Castle, county Meath, 1769; gained battles of Assaye (1803) and Argaum (1803) in second Mahratta war; chief secretary for Ireland, 1807-09; commander in Peninsular war, 1808 and 1809-14; created Duke of Wellington, 1814; ambassador at Paris, 1814, and at Vienna Congress, 1815; commanded in the Waterloo campaign, 1815; commander-in-chief, 1827-28 and 1842-52; prime minister, 1828-30; carried Catholic emancipation, 1829; died at Walmer Castle, near Deal, 1852; buried in St. Paul's Cathedral.

**Wolfe, James**; born in Kent, 1727; appointed to command a brigade in American expedition, 1758; had a leading part in taking of Louisburg, 1758; appointed major-general, 1759, and placed in command of the expedition against Quebec; Quebec taken, 1759; Wolfe killed in battle on Heights of Abraham, 1759.

**Wolseley, Sir Garnet Joseph, first Viscount**; born near Dublin, 1833; served in Crimea and Indian mutiny; commanded the Red River expedition in 1870; commander in Ashanti war, 1873-74; commanded in Egypt, 1882; commander of the Gordon relief expedition, 1884-85; field-marshal, 1894; became commander-in-chief in Britain, 1895; created viscount, 1885; died, 1913.